

NEW MUSTANG GT350 MEETS SHELBY'S ORIGINAL

ROAD & TRACK[®]

NOVEMBER 2015

ROAD CARS THAT RACE



GT3 RACERS THE HOTTEST SPORTS CARS MUSCLE UP FOR BATTLE
THE COMPARISON MERCEDES-AMG GT S VS. PORSCHE 911 CARRERA GTS
NEW MIATA CHASING THE SUN ACROSS NORWAY'S LONGEST DAY
DRIVEN AUDI R8, VIPER ACR, LOTUS EVORA, ACURA TLX—RACE VS. ROAD



A man with short dark hair, wearing a blue and white striped long-sleeved shirt, is driving a vehicle through a desert landscape. He is looking out the window with a focused expression. The vehicle is a light-colored SUV or truck, and the background shows a vast, arid desert under a bright sky. The text "CHASE DOWN YOUR PASSION. NEVER HALFWAY." is overlaid in the upper right.

*CHASE DOWN YOUR PASSION.
NEVER HALFWAY.*

CHRIS BURKARD
ADVENTURE PHOTOGRAPHER

To capture moments few have witnessed,
you must venture where few have gone.

The road to get there may be more
challenging, but the rewards are worth it
for those willing to brave the journey.

 **Hankook**
driving emotion



In the lead role: John Travolta, movie legend and aviation aficionado. Guest star: the legendary North American X-15 that smashed all speed and altitude records and opened the gateway to space. Production: Breitling, the privileged partner of aviation thanks to its reliable, accurate and innovative instruments – such as the famous Chronomat, the ultimate chronograph. Welcome to a world of legends, feats and performance.

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The original GT-R[®] was designed to push beyond the known limits of performance. 45 years later, it blurs the line between genius and insanity as its hand-built VR38DETT motor produces 545 hp of track-punishing power. You'd have to be insane to push the limits as far as we have. And even crazier to think we'll stop.

2016 GT-R[®] 45th Anniversary Gold Edition model shown – availability is limited. Obey all traffic laws, always drive safely and wear your seat belt. Damage resulting from racing, competitive driving, track and/or airstrip use not covered by warranty. See your New Vehicle Limited Warranty and Owner's Manual for proper vehicle operation and complete warranty details. ©2015 Nissan North America, Inc. Nissan and GT-R logo are Nissan trademarks.



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THE COMPARISON

AMG GT S vs.
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ACURA TLX-GT

Acura guts its family sedan to take on the Pirelli World Challenge.

BY LARRY WEBSTER



ON THE COVER

MERCEDES-AMG GT S AND GT3 RACE CAR BY ROBERT KERIAN

ON THE TRAIL OF THE

2016 CHEVROLET SILVERADO

WITH THE FOLKS WHO CREATED IT.

The 2015 Silverado 1500 was named “**Highest Ranked Large Light Duty Pickup in Initial Quality**” by J.D. Power¹ and the new 2016 Silverado comes from the same stock. The new face of strong, Silverado has a muscular front end that reflects its strength and capability. We sat down with the team of designers and engineers behind the new Silverado, the latest addition to the family of the most dependable, longest-lasting full-size pickups on the road.²





JOHN CAFARO

EXECUTIVE DIRECTOR,
GLOBAL CHEVROLET DESIGN

This Silverado makes some great advances using new lighting technology. How did this technology inspire the vehicle design?

Lamps are the windows to a truck's soul. They help give a truck its signature look—both during the day and at night. The new LED lamps on the 2016 Silverado gave us the opportunity to create a stronger, more expressive front end while giving our drivers a substantial improvement in night driving and overall visibility. It highlights how much technology is in the truck.

Truck design is one of the hottest areas in automotive design right now. What are some of the synergies between truck and other vehicle design?

Corvette and Silverado have been the iconic bookends for Chevrolet design for more than 50 years. In the past, they had completely separate design teams. We now have a lot more cross-pollination in our design teams and design work. You can see that influence especially in the hood and grille. These trim details allow customers to express personality. Grilles are like cowboy boots—they are your calling card.

***“Grilles are like cowboy boots –
they are your calling card.”***

John Cafaro

EXECUTIVE DIRECTOR, GLOBAL CHEVROLET DESIGN



TIMOTHY ASOKLIS

CHIEF ENGINEER – 2016 FULL-SIZE TRUCK,
CURRENT PRODUCT SUPPORT

The new Silverado was engineered with multiple enhancements, including articulating running boards. How do they work?

A new feature on Silverado, available articulating running boards automatically extend down and out from the sides of the cab to act like traditional steps. Just tap the foot control and they articulate rearward for access to the bed and its contents. No competitor offers this feature.

Towing is important in a truck. What advances set the 2016 Silverado apart when it comes to towing capability?

Throttle progression and grade braking are features that have come from our engineers studying the challenges of pickup truck towing in the real world. Throttle progression, along with our available 8-speed automatic transmission, makes accelerating with a heavy tow load both smooth and quick.

Using intelligent and adaptive algorithms, steep hills are more easily handled with Grade Braking Mode, which transfers some of the burden of slowing down and stopping from the brake pads to the engine and transmission.



¹ The Chevrolet Silverado LD received the lowest number of problems per 100 vehicles among large light duty pickups in the proprietary J.D. Power 2015 Initial Quality Study.SM Study based on responses from 84,367 new-vehicle owners, measuring 244 models and measures opinions after 90 days of ownership. Proprietary study results are based on experiences and perceptions of owners surveyed in February–May 2015. Your experiences may vary. Visit jdpower.com. ² Dependability based on longevity: 1987–April 2013 full-size pickup registrations.



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The best seats in the house are no longer in your house.

Welcome to the front row. Or, would you prefer to be right up there onstage?

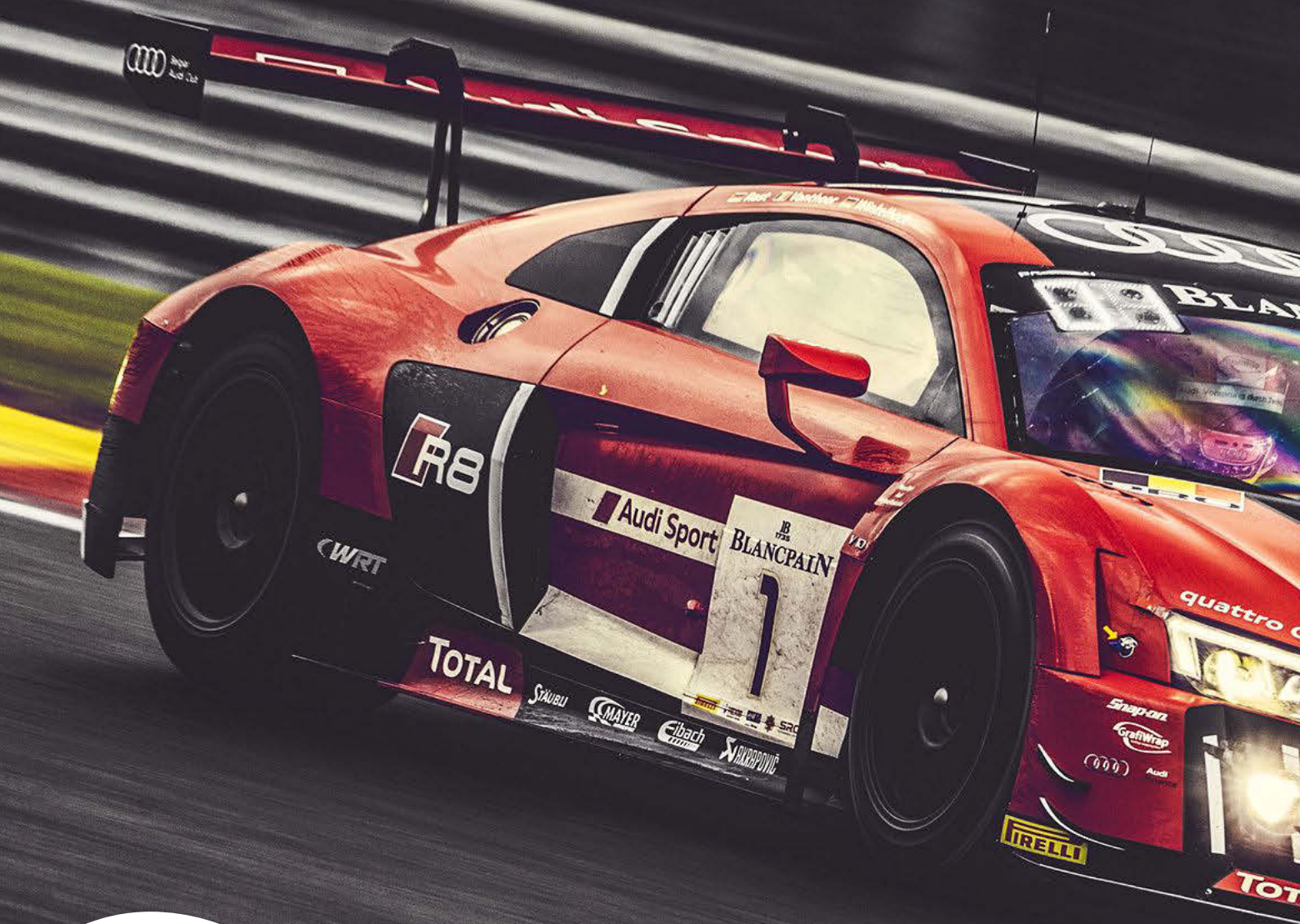
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THE ENTIRELY NEW
LINCOLN MKX



GO

CAPTURING THE LIFE AT SPEED

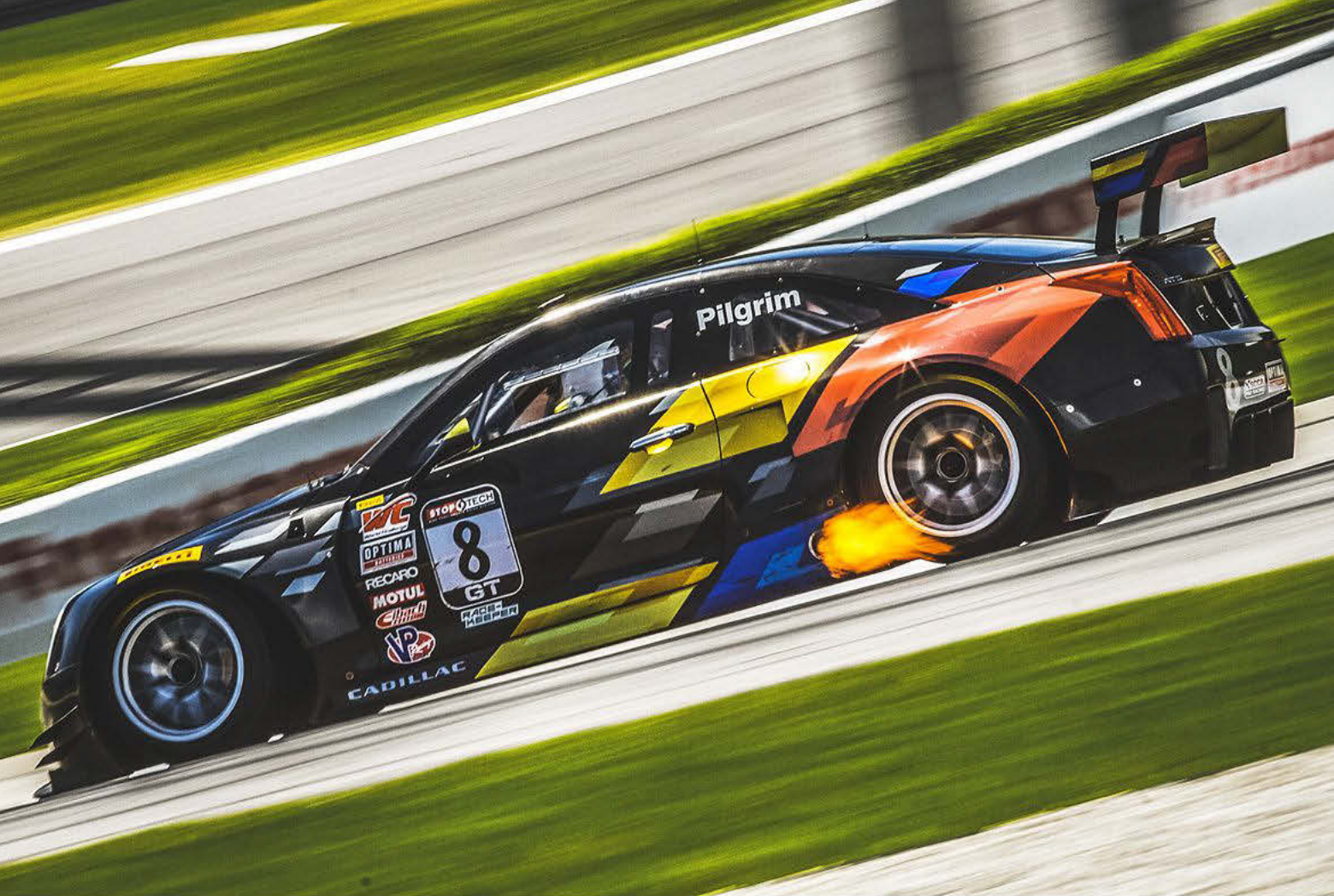
FIA GT3: It's the brilliantly simple formula that transforms fearsome sports cars into even fiercer racing machines. GT3 cars are, first and foremost, real cars—no Camrys with pushrod V-8s here. Modifications generally involve deleting weighty niceties and adding safety cages, cartoonish fenders, carbon-fiber bodywork, slicks, and rear wings the size of surfboards. GT3 also allows for an amazing degree of diversity. Air restrictors and ballast keep output to about 500 hp and dry weight to around 2800 pounds, but the rules don't dictate engine displacement or layout. That makes it relatively easy to build a GT3 car, as more than a dozen manufacturers have. They're raced at Bathurst in Australia, Daytona, the Nürburgring, and in series like IMSA's WeatherTech SportsCar Championship and the SCCA's Pirelli World Challenge. It's *Gran Turismo* brought to life. Here are a few of our favorites. —MARSHALL PRUETT



AUDI R8 LMS

GT3 rules prohibit all-wheel drive, forcing Audi to build something we've always wanted: a leaner and meaner rear-wheel-drive R8. Weight distribution shifts from 50/50 to a Porsche 911-esque 44/56 percent rear bias. Otherwise, the separation between road and track is tantalizingly thin. The R8 LMS's aluminum and carbon-fiber chassis is randomly chosen from the assembly line, and the 5.2-liter V-10 needs few modifications, although the Germans do handpick each engine based on dyno figures.

PHOTOGRAPH BY BRECHT DECANCO | CANON EOS-1D X, 400MM LENS, ISO 400, 1/80 SEC @ f/7.1



Go

CADILLAC ATS-V.R

The Cadillac ATS is the least expensive road car in GT3 competition. Its conversion is one of the most extensive, including 47.9 feet of steel tubing for the safety cage. Rebuilding the Caddy's 3.6-liter twin-turbo V-6 alone takes five full days. It's worth it, as the ATS-V.R sounds satanic. "Like it's ripping holes in the air," confirms Cadillac factory driver Andy Pilgrim. "I love it."

LEXUS RC F GT3

It looks like it should decimate everything in its path, but early forays have been humbling. After running more than 10 seconds off pace at the Nürburgring, Lexus pushed the RC F's planned debut to late 2016. We doubt power is the problem, as the 5.0-liter V-8 already produces 467 hp in stock form.



LEXUS: NAT TWISS; CADILLAC: BRIAN CLEARY/GETTY IMAGES

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Go

BENTLEY CONTINENTAL GT3

Even with the lighter 4.0-liter V-8 rather than the 6.0-liter W-12, the Bentley Continental needed considerably more than a simple weight-loss program to get itself into GT3 fighting condition; it required the automotive equivalent of bariatric surgery. To reduce from its starting weight of some 5050 pounds to a race-ready 2866 pounds, Bentley had to remove roughly a Chevy Spark's worth of tonnage. "The first to go are the foot massagers," factory Bentley racer Guy Smith says with a laugh. "All the luxury weighs a considerable sum. We save almost 50 kilos [110 pounds] per door by using lightweight materials. But it still has the Bentley feel from inside. And I'm told it's quite imposing to see in one's rearview mirrors."

PHOTOGRAPH BY JAMES LIPMAN | NIKON D4, 70-200MM LENS @ 175MM, ISO 1600, 1/40 SEC @ f/2.8

Go

NISSAN GT-R NISMO GT3

The GT-R has taken a while to reach its competitive stride. Its 3.8-liter twin-turbo V-6 is a technical marvel, but the car is tall and heavy. And although the GT-R has shed AWD, challenges remain. "We're a big, front-engine car, so we make up our time in the corners with big dive planes, and we make it up on the straights with giant turbos," driver James Davison says. "Godzilla's coming for you, baby."

MERCEDES-AMG GT3

Behind the AMG's throwback, Panamericana-style grille roars a throwback engine: the naturally aspirated 6.2-liter V-8 we know and love from the last-generation SLS gullwing. It survives here because Mercedes already adapted it for racing in the old SLS GT3 car. Not surprisingly, the AMG GT3 sounds like artillery fire shattering the Ardennes.



AMG: DAIMLER AG; GT-R: BRECHT DECANQ





THE TALE OF THE 2016 TRAVERSE

AS TOLD FROM THE SAFETY OF THE DRIVER SEAT.

We sat down with Scott Thomas, one of the inventors of the industry-first Front Center Air Bag¹ available in the 2016 Chevrolet Traverse. Scott's career in safety restraints spans more than 25 years and 50 patents. He always has customers in mind, and the Front Center Air Bag is an embodiment of his hard work.



SCOTT THOMAS

SENIOR STAFF ENGINEER,
ADVANCED RESTRAINT SYSTEMS

What sparked a need for the Front Center Air Bag?

Safety is critical to our customers and to us. This inflatable technology was developed to assist the safety belt by providing inflatable coverage to drivers and front-seat passengers in far-side impact crashes where the affected occupant is on the opposite, non-struck side of the vehicle.

Why is the Front Center Air Bag so revolutionary?

It's unique. When deployed, the air bag may either help restrain the driver or cushion between occupants. What differentiates this air bag from all others is that it can position itself between the front occupants and it may also provide a level of restraint to the driver while having little surrounding surface for the bag to push against.

Why was it placed in the driver seat?

The driver seat was by far the preferred option. Other locations in the vehicle don't move or track with the driver. No matter how the seat is adjusted, the air bag remains adjacent to the driver.

How is the restraint function accomplished?

The cushion has an inflated tubular structure to resist lateral bending. No other air bag has this. It also has two tethers that help curve the cushion toward the driver to functionally catch the driver in some impacts, similar to catching a ball with a baseball mitt.

SEE IT IN ACTION AT CHEVY.COM/TRaverse-SAFETY

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¹ Air bag inflation can cause severe injury or death to anyone too close to the air bag when it deploys. Be sure every occupant is properly restrained.





Go

MCLAREN 650S GT3

McLaren's 650S, already a lightweight, purposeful sports car with a twin-turbo 3.8-liter V-8, easily becomes the 650S GT3. Those who work on the Working race car say its carbon-fiber chassis is like a tub for a Le Mans prototype and that the rest of it is like an F1 car with fenders. The steering wheel, derived from the one in the 2008 McLaren MP4-23 F1 car, can be equipped with a hand-clutch system.

PHOTOGRAPH BY CHRIS BROWN | CANON EOS-1D X, 400MM LENS + 1.4X EXTENDER @ 560MM, ISO 200, 1/100 SEC @ f/7.1

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RDX with Advance Package shown. *20 city/29 highway/23 combined mpg rating for RDX FWD model. Based on 2016 EPA mileage ratings. Use for comparison purposes only. Your actual mileage will vary depending on how you drive and maintain your vehicle. ©2015 Acura. Acura, RDX, and the stylized "A" logo are registered trademarks of Honda Motor Co., Ltd.



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Letters

MCCLUGGAGE TRIBUTES, A BUGATTI DEBATE, AND SUPERCAR DREAMS.

Dear R&T,

In 1961, I was driving my Porsche Speedster on the Illinois Tollway. A flash of headlights turned my attention to a rapidly overtaking Ferrari 250 GT. It was Denise McCluggage on her way to Meadowdale for a race. She waved as she went by, and over the wind noise, I heard the sound of music from her car radio playing. Her lips were moving as she sang along. Denise won that race, besting Dick Lang in a Corvette. I remember that her radio was still playing during the race, but her lips were no longer moving.

STEVE CARMICK, CHEHALIS, WASHINGTON

Thank you, Sam Smith, for your insightful eulogy for Denise McCluggage [Smithology, August], one of my heroes from her racing days at Nassau to her articles in *Autoweek*. And thanks for pointing out the synergy between downhill skiing and racing (rhythm and grace). At my first driving school at Lime Rock, after getting the Diving Turn sort of right, I remember it felt just like making a good turn skiing.

JOHN STERN
CAPE NEDDICK, MAINE

Never have I thought so much after reading an article from someone I don't know, about somebody I don't know. Sheer brilliance.

STEPH REGNIER
LONDON, ONTARIO

Sam Smith carried a heavy burden as he weighed in on the debt we all owe to Denise McCluggage. Her generosity is the aspect of her personality that is most apparent to those of us whose names do not grace the masthead at the mainstream magazines, or the finishing order of the road races of the Sixties. I treasure my copy of *By Brooks Too Broad for Leaping*. Yes, we're going to miss you, Denise. Godspeed. I hope there are manual gearboxes in heaven.

DICK STEWART
CULVER CITY, CALIFORNIA

Forever and ever, Amen.

PADDLED RAW

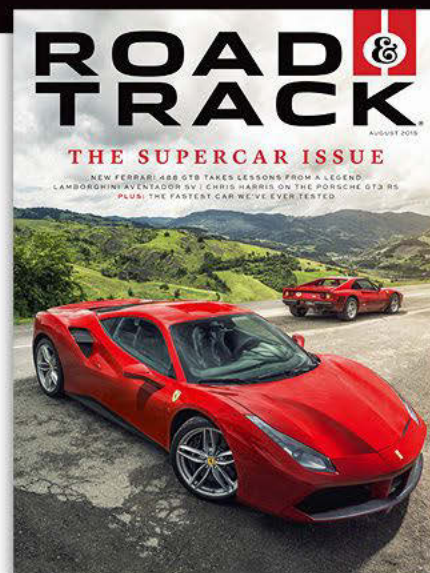
In "Purple Reign," Chris Harris states that "anyone who tracks or races a 911 always ends up looking for front grip." Then why on earth has it taken Porsche until 2016 to learn that it needs a wider front section? I've been baffled by this for years. A C5 Corvette Z06 was factory equipped with 265s up front. Welcome to 2001.

JUSTIN ALLEN
HICKORY, NORTH CAROLINA



The fact that Chris Harris doesn't personally like paddle shifters is of no importance to anyone but himself. Yet his preference is emphasized in the text (complete with pseudoexpletive), and the lack of a manual is bemoaned in the subheading of the article and the table of contents! Even he expressed the inappropriateness of printing his personal opinion, but you, the editor, patted him on the head. By the way, I don't care for the color of his sunglasses.

KEITH FINLAYSON
SALT LAKE CITY, UTAH



If HR finds out about all the head patting going on in the office, we're going to have bigger problems than the color of Harris's sunglasses.

FLASHBACK

I just finished the August Supercar Issue. What, did your editors flash back to the Nineties? Between the hyperbole and the references to waves of torque, getting rear-ended by semis, and full thrashings, you'd think they were scriptwriters for horrible premillennium porn. They should note that the truest car porn of the entire issue is the '66 Shelby GT350 in the inside cover Rolex ad. Call me crazy.

CHRIS PLACCO
MONTEREY, CALIFORNIA

I like to fantasize as much as any other American male. But it seems that most automotive publications devote significant attention to supercars on a routine basis. How about an Affordable Car issue?

PAUL DAVIS
GRANTS PASS, OREGON

Then what would we do with all these premillennium porn scripts?

A BUG IN YOUR EAR

No one said a supercar had to be the best at everything. While it may not be a purebred track car or ridiculously good-looking, the Bugatti Veyron is a vehicle



EDITOR'S LETTER BY LARRY WEBSTER

JAGUAR DESIGN CHIEF IAN CALLUM AND I were standing side by side at an auto-show display, staring at a concept car. I can't remember the car, but it was gorgeous, so low and squat, it was practically kissing the turntable, with an abbreviated greenhouse and simple lines but provocative proportions. Being an annoyingly analytical guy, I asked Callum—creative genius and, incidentally, hot-rod fanatic—why, exactly, the machine rotating under the lights in front of us looked so good. He glanced at me quizzically and said, “Every car looks better once it's been lowered and chopped.” Graciously, he didn't finish his statement with “Duh.”

I certainly won't argue with Callum's logic, but I would add that every car also looks better with fenders swollen to accommodate wide tires, wings, spoilers, and racing numbers on the doors. This issue of *R&T* is dedicated to such machines, street cars modified for racing, not only because they're the Sofia Vergara of cars—you can't help but gawk—but because suddenly and unexpectedly we're in the glory days of production-based auto racing.

Today, more manufacturers than ever are racing their street cars in series like the IMSA WeatherTech SportsCar Championship and the SCCA Pirelli World Challenge. By last count, more than a dozen mainstream companies such as GM, Mercedes, and Nissan—not just the exotics like Ferrari and Porsche—sell ready-to-race cars. They're the cars we see every day, taken to the extreme. They're relatable but tinged with fantasy. They're our dreams and doodles come to life.

Nobody predicted this, and there is no single reason for this newfound manufacturer interest in the paddock. The democratization of technology, of course, plays a role. Now that every carmaker has access to big power as well as the sophisticated chassis controls to keep it in check, they have finally realized that the best way to establish performance bona fides is to head to the track. Funny, that's an idea we've preached since our inaugural issue in 1947. And even if the technology transfer from the circuit to the street is not as obvious as it once was—and may have reversed—smart automakers use racing to develop and motivate their

greatest resource—people. Race weekends present both immovable deadlines and clear performance reviews.

This moment won't last forever. In future budget meet-

We'll soon look back longingly on this period just like we do the Can-Am era of the late Sixties.

ings in somber conference rooms, bean counters will surely argue—in corporate speak, natch—that racing provides a poor “return on investment.” And that's where you and I come in. If we don't pay attention, if the marketers can't argue that racing has helped the company image, we'll soon look back longingly on this period just like we do the Can-Am era of the late Sixties.

At the least, watch a race on the tube. But, really, go see one. If you went to an event five years ago and weren't enthralled, believe me, everything's changed. The promoters have figured out how to stuff the card with nonstop action, the pits are open, and the cars sound glorious. The food's not even that bad. ■

Letters CONT.

worthy of the supercar label. How many manufacturers place top speed as their primary target and follow through with a record-breaking rocket for the road? Cammisa's column [The Enginerdy Dept.] reminds us of the engineering-to-the-limit philosophy that was poured into every component. It reminds us that despite the 4500-pound curb weight, every effort was made to create lightweight components. To this day, there's nothing like it available.

JOSEPH VALENTINO
AUSTIN, TEXAS

Cammisa, you couldn't be more wrong about the Bugatti Veyron! The Veyron is a monstrosity. It *is* ugly and too heavy. It could never hold a candle on the track against a real sports car. Since when does speed in a straight line or price dictate a great sports car? The Corvette, Viper, Ford GT, and the nimble GT-R: These sports cars, by far, exceed anything built by VW/Bugatti.

ROBERT CLAYPOOL
RUNNING SPRINGS, CALIFORNIA

The Veyron is what happens when one man has far more money than good sense. Being ugly and fast in a straight line doesn't make a car relevant. Supercars need to turn. If the curious absence of an official Nordschleife lap time is any indication, the Veyron doesn't do this very well. Anyone who picks a Veyron over a McLaren F1 is either daft or prepubescent. Most kids outgrow bad taste.

MEL ATKINS
CEDAR SPRINGS, MICHIGAN

So that's what the doctor meant by “stunted.”

AN EYE FOR DETAIL

Love the August issue, particularly the David Kimble cutaways of the Lamborghini Countach, Porsche 959, and F40 [Go]. I had that Ferrari poster on my wall as a kid. Then and now, the F40 is my choice—single, purposed, and brutal.

The photo of the Ferrari 288 GTO on page 34 is also awesome, though one might argue it's hard to

CONTINUED ►



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Letters CONT.

take a bad photo of that car. Cool cars make great subjects. Lamborghini Aventador SV on track, reflection on the side of the Range Rover Sport SVR, detail shots of the English wheel—my compliments to Messrs. Pardon, Salt, Trahan, and Smith.

PATRICK JENNINGS
MARYVILLE, TENNESSEE

In 30 years, I have saved a few issues that I consider to be classics; the Supercar Issue moves to the front of the line, thanks to pages 14 and 15 with the cutaway of the F40. My shelf has two Ferrari models, a 1962 Ferrari GTO and an F40. Needless to say, both are red. Thank you for helping me add one more daydream to my repeated cycle.

HANS BLUEHS
SHARPSBURG, GEORGIA



ONE MAN'S VICTORY

I finally trumped Egan. It all started with "Dino Car of the North" [March 1985]. I followed that great story with the purchase of a 246 GT. Much later, I read his story about his purchase of the Bullitt Mustang [August 2009] and bought one myself. But I bought a 1965 Morgan Plus 4 in January, just weeks before Egan acquired his Morgan Mission.

Victory is sweet.

DAVID WEISEL
BLOOMINGTON, MINNESOTA

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Take-Up Point

SOMETIMES YOU SEE IT, SOMETIMES YOU DON'T.

SMITHOLOGY BY SAM SMITH

THE MEMORY HIT AT THE END of the driveway. I was in my wife's Honda, a 2005 CR-V with 150,000 miles on the clock. And the optional five-speed manual. The car hails from an impossible time—it seems odd that this was only 10 years ago—when popular SUVs could be had with clutch pedals. A great thing, even in a warmed-over Jeepster.

Anyway: Our house is on a steep incline. The car was parked downhill, maybe a foot from the garage door. I put it in reverse, blipped the throttle, and backed into the street. Nothing special, just muscle memory, from years of driving.

My friend Jack Baruth loves this stuff. He's mildly obsessed with the mind's approach to subconscious work—the things you do but don't know *how* you do. Talking while formulating an argument. Snapping the wheel to catch a sliding car. Backing out of an uphill driveway with a clutch while adjusting the radio and watching for traffic. The stuff that seems easy, but is really just rooted deep in your head.

"You don't plan any of it," he once said. "Even the learned behavior, you rarely remember picking up."

Driving with three pedals doesn't count. That picking-up was planned, though not by me. And I remember every moment of the process, because it came in one fell swoop.

We were in my father's BMW 318ti. A '96, I think, in 1997, the year I turned 16. Black, sport pack, manual. A gutless, 1.9-liter four that sounded like a blender gnawing on a wad of carpet. The "ti" stood for "touring international," a phrase that almost meant something in the 1950s, but by the 1990s, was just marketing—in this case, to denote a hatchback body.

At first, I thought my dad was just teaching me to drive a stick. At 16 and a few months, I had already earned a license, already had my first accident. (Missed a stoplight in the family Volvo while changing CDs. I cannot remember being dumber.) Two weeks of lessons later, I suspected something was up.

We drove in 20-minute spurts. Before dinner on weeknights, after lunch on Sundays, whenever. Always the same route: leave driveway, around the subdivision, back. Practice, learning how to shift, long past the point where I thought I was good enough.

The truth soon came out: My father, a patient man, wasn't going to let me drive a manual—which meant borrowing his car—until I met what seemed like an arbitrary standard of smoothness. He wasn't mean, just firm about it: *You will do this right. And I won't feel it when you drop into second.*

The neighborhood was perfect for it. A rolling, quiet patchwork of curves. Enough uphill starts to keep you thinking. Or at least keep 16-year-old me thinking, because the first time you

shift a manual gearbox, you're a bag of elbows. This gear? That one? Then you screw it up again.

So I grumbled and griped and did it. Dad in the passenger seat for weeks, me searching for stop signs and trying to whip off ghostly shifts. The process took a month of afternoons and evenings, driving nowhere. The monotony was tamed through cameos from other cars—the '67 Mini Cooper S of a family friend or Dad's '34 MG PA, a rolling restoration that he later sold. The latter had a crash gearbox with no synchros or dog rings; if you didn't double-clutch and match revs perfectly, the lever simply wouldn't go into gear. (I can still hear the grinding—high-pitched, like a kitchen knife in a Disposall.)



*But oh, I hated him for the leash.
I was a teenager. Driving fast was Important.
So was going places, away from my parents.*

I loved the PA and Mini, of course. But oh, I hated him for the repetition. The leash. The application of more rules to something so freeing. I was a teenager. Driving fast was Important. So was going places, away from my parents.

I eventually learned to shift to his liking. Anyone would, with that much practice. Life went on. In college, friends would watch me change gear on road trips and ask why I hit the clutch twice on downshifts. Habit, I'd say. Then I'd have to tell the backstory, which I inexplicably found embarrassing.

But something stuck. I later met everything from cranky old formula cars to prewar Alfas, and none of their transmissions seemed as fussy as the MG's four-speed. It never occurred to

me to consider why I was so comfortable in them, so quickly. Who would? Maybe it's me. With personal history, I've always been great at missing the obvious.

And then, today, we ran out of milk. I hopped in the car after dinner, aimed for the store. As I notched the Honda into reverse, that month in the BMW came flooding back. My eyes fell on the CR-V's shifter. And sat there.

My dad turned 61 this year. I'm typing these words on his birthday, a Thursday in August, late at night. I always call him on birthdays, but this one, I didn't. We have a newborn baby girl and a toddler daughter in the house, and I was so overwhelmed by parenthood—diapers, time shrinkage, sleeplessness—I forgot to pick up the phone. Stuff slips your mind.

Coincidentally, Dad and I haven't spoken for a few weeks. We have a good relationship, but I said something to him a while back that I regret. Some argument-starter that seemed important but probably wasn't.

Maybe that triggered the memory. Maybe, these days, I'm just a little more conscious of intangible debt.

Either way, I'll call him in the morning. For a lot of reasons, but also because the older I get, the more I find myself appreciating things I don't understand. And the fact that, once your mind takes a set to something, you almost never forget. ■

Sam Smith is an editor at large at R&T. The PA is now owned by a Kentucky man named Lin, who has fortified its 35-ish hp with a factory Roots blower. We would like to point out that Lin is a Great American.



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The Show Goes On

WHATEVER YOUR TASTES,
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PADDOCK PUNDIT BY MARSHALL PRUETT

THE CIVIL WARS THAT DIVIDED open-wheel racing (and sports-car racing, and every other non-NASCAR form of the sport in the past 30 years) left once-proud motorsport empires like IndyCar and IMSA in virtual ruins, and we were left to wade through the wreckage. Many fans, weary of watching the latest collection of idiots find new and inventive ways to suck the spirit from a sport built on passion and curiosity, wrote off motor racing entirely. There were plenty of times when even I wanted to walk away.

But now, the ego battles that escalated into those wars are long over, and if you're looking for something a bit more exciting than the usual herds of Dales and Danicas circling Daytona, the sport of motors has plenty to offer. For one thing, a day at the races is a far cry from the better-get-a-good-seat-in-the-grandstand experience it once was. Apps, streaming media, and smartphones have made getting your speed fix easier than ever. And as track promoters add A-list bands, microbreweries, and hipster-friendly vendors, today's race events offer a touch of Coachella to go along with the car watching. But just because modern raceways cater to a more diverse crowd doesn't mean the races themselves are any less exciting.

This will be especially true in 2016, when automakers will return to competition at a level not seen in years. We already have IMSA's GT Le Mans (GTLM) class, which features more marques and higher car counts than the 24 Hours of Le Mans GTE Pro class, with factory Corvette C7.Rs trading paint with factory Porsche 911 RSRs on legendary tracks such as Sebring and Watkins Glen. And once the Ford GT debuts next year, the Blue Oval will face off against Corvette, Aston Martin, BMW, Ferrari, and Porsche.

Below GTLM, IMSA's GT Daytona class features all the GT3 cars in this issue's Go section [pages 10–19] in an unrivaled supercar cage match. IMSA's format fosters a festival atmosphere where fans can party themselves into oblivion while roaring engines provide the soundtrack or revel in seeing some 40 cars and upwards of 100 drivers attack each other on tracks from Mazda Raceway Laguna Seca to Lime Rock. Fans can come for the colors and sound, enjoy the high-tech everything, or engage their inner chess hawk as teams plot an endless array of strategies to outthink and outperform their competition. Or they can simply party.

Then there's SCCA's Pirelli World Challenge series, which has multiple production-based classes, headlined by the GT class, a veritable Valhalla of GT3 masterpieces. World Challenge is not about endurance; instead, imagine 50 fast minutes of

bodywork-shedding mania designed for the ADHD generation.

You'd think IndyCar, for all its faults, would be more attractive to this new generation of fans. After all, like IMSA, the series has transformed itself into a modern entertainment spectacle. IndyCar is the polar opposite of F1: raw, unfiltered, and primitive. Tiny 2.2-liter turbo Chevy and Honda V-6s power a field of 24 cars on street circuits, road courses, short ovals, flat ovals, and superspeedways, not to mention Indianapolis. The angry little mills, putting out 750-plus horsepower, are a nightmare to contain. The high speeds, along with the open-cockpit design, imbue Indy with a constant air of daredevil danger.



Imagine trying to nail an apex while traveling 200 feet per second with a 2.7-ton weight on your roof.

With aerodynamics at physics-bending extremes, IndyCar also appeals to geeks. In maximum road-course downforce configuration, drivers contend with the force of 5400 pounds of air bearing down on their cars. Imagine trying to nail an apex while traveling 200 feet per second with a 2.7-ton weight on your roof. Now add 23 hypercompetitive drivers trying to do the same thing at the same time, and you've got unhinged racing insanity. Who needs the X Games?

So don't believe the haters. Modern motorsport is alive and well, and the competition has never been more cutthroat. And now, the manufacturers have stepped up. Will you? ■

Former race engineer and R&T contributing editor Marshall Pruett harbors no ill will toward the ADHD generation.

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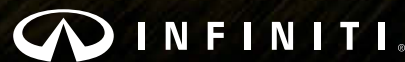
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THE COMPARISON | 2016 MERCEDES-AMG GT S | 2015 PORSCHE 911 CARRERA GTS

SPOILS OF STUTTGART

IT TOOK DECADES, BUT MERCEDES FINALLY HAS A DIRECT
CHALLENGER TO THE 911. OR DOES IT?

BY JACK BARUTH | PHOTOGRAPHY BY ANDREW TRAHAN

I

WAS LOOKING DOWN THE NOSE OF THE Mercedes,” Jim said, “and I expected to rotate at top speed and take off.” We’re at Carolina Motorsports Park, and Jim, a retired Marine aviator, is explaining to my father, another former Marine who served in Vietnam as a forward artillery observer, what it was like to head toward the kink on the track’s back straight at full throttle.

“Instead, Jack went flaps up, so to speak, and rolled into an air-combat maneuver. It was like a spontaneous barrel roll.” He’s sweating as he tells the tale; it’s 98 degrees outside and the track temperature has to be way higher. Yet the Mercedes-AMG GT S could still pack enough heat-soaked air into its twin turbochargers to reach 132 mph before dipping down to about 114 for the kink.

Jim’s owned some seriously fast cars since leaving the Corps, but he’s clearly charmed by the ability of this long-nose Mercedes to warp time and space in a manner that wouldn’t disgrace his old EA-6 Prowler. “This,” he says, thumping a calloused hand on the simmering-hot hood, “is the one.”

Yet my father has already wandered off to sit behind the wheel of the red Porsche 911 Carrera GTS parked next to us. “What’s it cost?” he inquired, in the same deadly serious tone he used to ask me what my high-school report card would show.

Two men, part of the baby boomer generation that is currently buying many, if not most, of the high-end cars sold in this country, both in the target demographic for something indecently fast but with a touch of civilization and road manners. This AMG and that 911 were made for guys like them, and I’d invited them to the racetrack because I was certain they would tell me which is better. Yet just minutes after riding in both cars, they’re already deep into agree-to-disagree territory. You know, this might be more difficult than I’d thought.

PORSCHE AND MERCEDES-BENZ ONCE HAD A VERY DIFFERENT, and far less fractious, relationship than they do today. You might even say they had an agreement, two firms sharing the home soil of Stuttgart, each quite reluctant to step on their neighbor’s toes. Of course, Dr. Porsche himself designed the mighty prewar SSK roadster for Mercedes before leaving to work on his own projects. The famous Gulf-liveried Porsche 917 traveled to races in a custom Mercedes transporter in the 1970s. Porsche, in turn, was essential to Mercedes in the engineering and final assembly of the sublime W124-chassis 500E sedan in the early 1990s.

Yet in the second half of the 20th century, there was rarely any overlap between the two companies’ product lines. Porsche appeared distinctly unable to produce a sedan. Mercedes limited its sporting offerings to the rather patrician SL roadster.

The 1997 introductions of the Porsche Boxster and Mercedes SLK represented a skirmish of sorts, a testing of the waters to see how the two companies might fare in head-to-head competition. But it was the introduction of the Panamera, a direct competitor to the bread-and-butter S-class, that started the war in earnest. That expensive and rapid Porsche sedan has been taking sales from somewhere, and you’d be naive to think those buyers are trading in minivans or economy cars. Mercedes-Benz, at that point, must have felt that it was bound by both honor and the pursuit of profit to respond. The AMG-badged SLS gullwing was a brilliant and deeply satisfying automobile, particularly in Black Series form, but its price and limited availability meant that it amounted to a mere warning shot across Porsche’s bow.

So here’s the full broadside, signaling the end of any deference between Mercedes and Porsche. The new AMG GT S offers performance very similar to the

Wide-body 911 GTS has plenty of presence, but it’s the long-nose AMG that gets the looks.







Trust me. I've been a 911 owner for 15 years, and I was never dumb enough to challenge the likes of an SL65 roadster in a stoplight drag.

2015 Mercedes-Benz SLS AMG Final Edition from which it was derived—for nearly \$100,000 less. How'd they do it? Well, the gullwing doors are gone, and the majestic, high-revving, thoroughly bespoke 6.2-liter V-8 has been replaced by a twin-turbo 4.0-liter V-8 that, while it remains unique to AMG-branded automobiles, shares bore and stroke dimensions with the turbo four-cylinder from transverse-engine AMG models like the CLA45. But most of the price cut clearly comes from what they call “value-based pricing strategy” in the grocery business.

It certainly didn't come from straight-line performance. The GT S fairly obliterates a standing quarter-mile in just 11.3 seconds, crossing the beam at 125.1 mph. The 911 Carrera GTS can't come close to matching it, although its 12.3 seconds at 116.2 mph is respectable enough. But this isn't the first time an AMG-powered Mercedes two-seater has left a naturally aspirated Porsche in the dust. Trust me. I've been a 911 owner for

15 years, and I was never dumb enough to challenge the likes of an SL65 roadster in a stoplight drag. No, you buy the Porsche for other reasons. Because you've wanted one since you were a child, because you have children of your own who fit in the rear seats that are made possible in a car of this size by the classic rear-engine configuration, because you value the traditional Nine Eleven driving experience above a time slip or a spec sheet.

That last reason is where our particular GTS shines, because it has something the AMG can't offer for any price: a clutch pedal and the seven-speed manual transmission that goes along with it. Now that the 911 GT3 and 911 Turbo are both restricted to the inhumanly competent but also completely inhuman PDK dual-clutch automatic, this 430-hp GTS is the quickest stick-shift Porsche you can buy. (*We haven't yet instrument-tested the new 385-hp Cayman GT4, which might claim that title —Ed.*) It's also a sort of love letter to traditional 911 fans from a com-



pany that has not always held those fans in the highest regard. Our test car is built to satisfy the most demanding (ahem) of the air-cooled Luddite brigade, from the track-day-friendly combination of steel brakes and center-lock wheels to the Alcantara-heavy interior and tinted glass sunroof that operates somewhat like the old 993-chassis Targa glass slider did.

Even with all that good stuff, this is still the familiar 991-chassis car we've known for a few years, so as we prepare to approach the Cherohala Skyway from the Tennessee side, I cajole road test editor Robin Warner into driving it for a while so I can get acquainted with the new Mercedes-AMG coupe instead. The 300SL-aping proportions and turret-top greenhouse of the SLS AMG are long gone, as are the wonderful doors that somehow made every drive a genuine experience to be recorded, whether on Instagram or in one's own diary. Not to worry; the GT S hasn't quite fallen into garden-variety status. To begin with, it possesses the barbaric yawp of a proper V-8, neither completely muffled by the twin turbos nor inauthentically reproduced by electronic or tubular means in the cabin.

Then there's the chrome-accented interior, which has lost none of the SLS's style and features a similar rotating selector

switch to control everything from the suspension stiffness to the way the fuel injection interprets commands from the accelerator pedal. Most of the time, even when you're in a hurry, you can leave it in "C" for Comfort, but as you twist it to the right, the engine becomes progressively angrier, and the transmission even more forceful in its instant shifts. For the Skyway, which mixes long, steep descents and ascents with one-two punches of high-speed, decreasing-radius turns, I select the first of two "S" modes.

My God, this is a fast car, almost supercar fast, really. I can leave poor Warner behind on the throttle any time I like and widen the gap farther with a late call to the hilariously grabby but utterly fade-free carbon-ceramic brakes, an \$8950 option. But it makes speed in the slightly anodyne modern fashion, boosting early and hard, then becoming a touch breathless before the next shift. The SLS was the opposite: If you demanded full throttle out of nowhere, it didn't feel terribly quick, but by the time the twin clutches traded places at redline, your heart was in your throat.

Of course, part of that fear had to do with the gullwing coupe's

It could use wider front tires, but the Porsche is at home in the Tennessee forest.



massive presence on small roads. This GT S, by contrast, feels much more manageable and nimble. The nose is visible in front of you, but it terminates in the same zip code as the cowl, while visibility to the sides and rear is appreciably better than it was in the SLS. The suspension, meanwhile, has been to charm school and grip school in the same semester, keeping composure and traction under full throttle on all but the most uneven corners. The tendency of the old car, particularly in non-Black Series form, to pitch forward and back when driven hard is gone. The result is a car that is faster than the stock SLS at the proverbial seven-tenths on the road, thanks to the electric-motor torque, superb corner-exit traction, and plenty of grip from the front end.

Truth is, the AMG feels completely natural to operate. Until I switch to the 911 at a rest stop and realize I've been kidding myself. *This* is a usable performance car. The steering: light but direct. Compared with an old 911, this isn't the most communicative helm in the world, but if you compare the 911 GTS with any other car you can purchase in a showroom tomorrow, it's just brilliant. Even the owner of a '73 Carrera RS would have to respect the new model's complete immunity to bump-steer on rough ground.

The view through the windshield is without peer. The nose disappears, yet you always know where it is. Call it a sixth sense.

You can place the AMG within a half-foot of an apex on the Cherokele, but the 911 is in-precise. Every control is exactly where you expect it to be, as long as you're a current Porsche owner. Everybody else is likely to laugh at the goofy fake ignition key to the left of the steering wheel and the rows of identical Chiclet controls surrounding the shifter.

In a drag race, the AMG pulls ahead, no contest.

It's better to ignore all of those controls—with the exception of the "Sport Plus" button that wakes up the exhaust and permits it to pop and crackle like a fuel-injected '70 911S—and focus on finding the right ratio among those seven gears. Porsche's put a lot of effort into preventing you from accidentally "money-shifting" the GTS—no easy feat when you consider there are five choices at the top of the pattern—and once you have a few miles behind the wheel, only the deliberate push required to get seventh will occasion any thought.

In those same few miles, you'll also realize how vital a proper manual transmission continues to be to the sports-car experience. This seven-speed is proper indeed, with light and easy throws across the close ratios. The 3.8-liter flat-six, permitted in the GTS to rev to 7600 rpm, seems to have no flywheel whatsoever. There's a rev-matching feature, accessible and observable through the LCD screen in the dashboard, that you won't need



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The quiet and solitude of early morning on the Blue Ridge Parkway is blasted away by raucous downshifting.





unless you've never operated a clutch before. The GTS makes heel-and-toe downshifts effortless. The steering wheel thrums in sympathy with each run to the redline. On the street, the steel brakes have a deeper pedal than you might wish, but they never lose heart, even after repeated engagements of the ABS.

Put up against the AMG, the 911 offers a more natural, immersive experience. It's more relaxing to drive at all potential velocities. Most important, on fast roads, the engine, transmission, suspension, and brakes all feel engineered to a similar potential. The Mercedes, on the other hand, sometimes feels like a rocket sled with a big parachute and a broken rudder. Yet it has a sense of panache and drama the Porsche lacks, particularly inside. It also offers a far more logical and modern set of telematics. I could go on at length about how the GT S handily beats the GTS in the critical area of satellite-radio channel browsing, for example.

We'll save that for another time. There's a racetrack to be driven. Carolina Motorsports Park has a few long straights connected by groups of relatively small-radius turns. No surprise, therefore, that the turbocharged AMG makes the best of its 73-hp advantage to lap a full five seconds quicker than the 911. Blame the heat, which spiked at 100 degrees during our lap testing and robbed the Porsche of precious atmospheric-pressure

air density, while the AMG's turbos assured a healthier supply of oxygen.

The last of the naturally aspirated Porsche Carreras approaches perfection.

But no amount of cool air would compensate for the fact that the big Mercedes is simply much stronger at corner exit. You'd expect a 911 to shine while accelerating out of a turn, and the 39/61 percent weight distribution of our Carrera GTS ensures that it does. Yet the Mercedes-AMG also has a rear-weight bias, although a milder one at 47/53 percent, and it has those twin turbos mounted between the cylinder banks to make the most of it. Less than 200 feet after each major apex on this track, it's managed to put between 5 and 10 mph on the Porsche, an advantage that it maintains or slightly increases all the way to the braking point for the next turn.

The AMG is powerful, so impeccably engineered, it's possible to run the air-conditioning—which issues from eyeball vents that have the feel of machined billet and an audible click similar to what you'd get from a \$3000, custom-built, Colt-pattern pistol—and rapidly take 30 degrees out of the cabin temperature, while still beating 130 mph on the back straight. The 911, on the other hand, is best enjoyed with windows down and the A/C off, to extract every last bit of those 7600 revs.

Here's what's wrong with the 911's handling: There's a staggering, pun intended, 60-millimeter difference between the

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245-width front tires and the 305-width rears. Big rear tires have been part of the wide-body 911 formula for about 40 years, usually to keep the cars on which they've been mounted from exiting the road ass-first. But this new-generation 991 platform doesn't need them, because what's right about the 911's handling is . . . everything else.

The data show the Porsche maintains the same corner speeds as the AMG pretty much everywhere on track, but those figures don't mention that the AMG comes with more aggressive tires—Michelin Pilot Sport Cup 2s versus the Porsche's Pirelli P Zeros. The 911's steering is far more alive, far more involved, far more usable than the AMG's. It encourages you to take chances, allows you to play pitch-and-catch with the engine's mass slung out way behind you, rewards a deft hand while failing to utterly punish mistakes. And the steel brakes are perfectly capable of dealing with the respectably trim 3341-pound curb weight.

This is the 911 for which I and many other Porschephiles have been waiting for quite some time. It's road-focused but track-capable, handsome and powerful, but not crass in its appearance or manic in its delivery. It has the right equipment

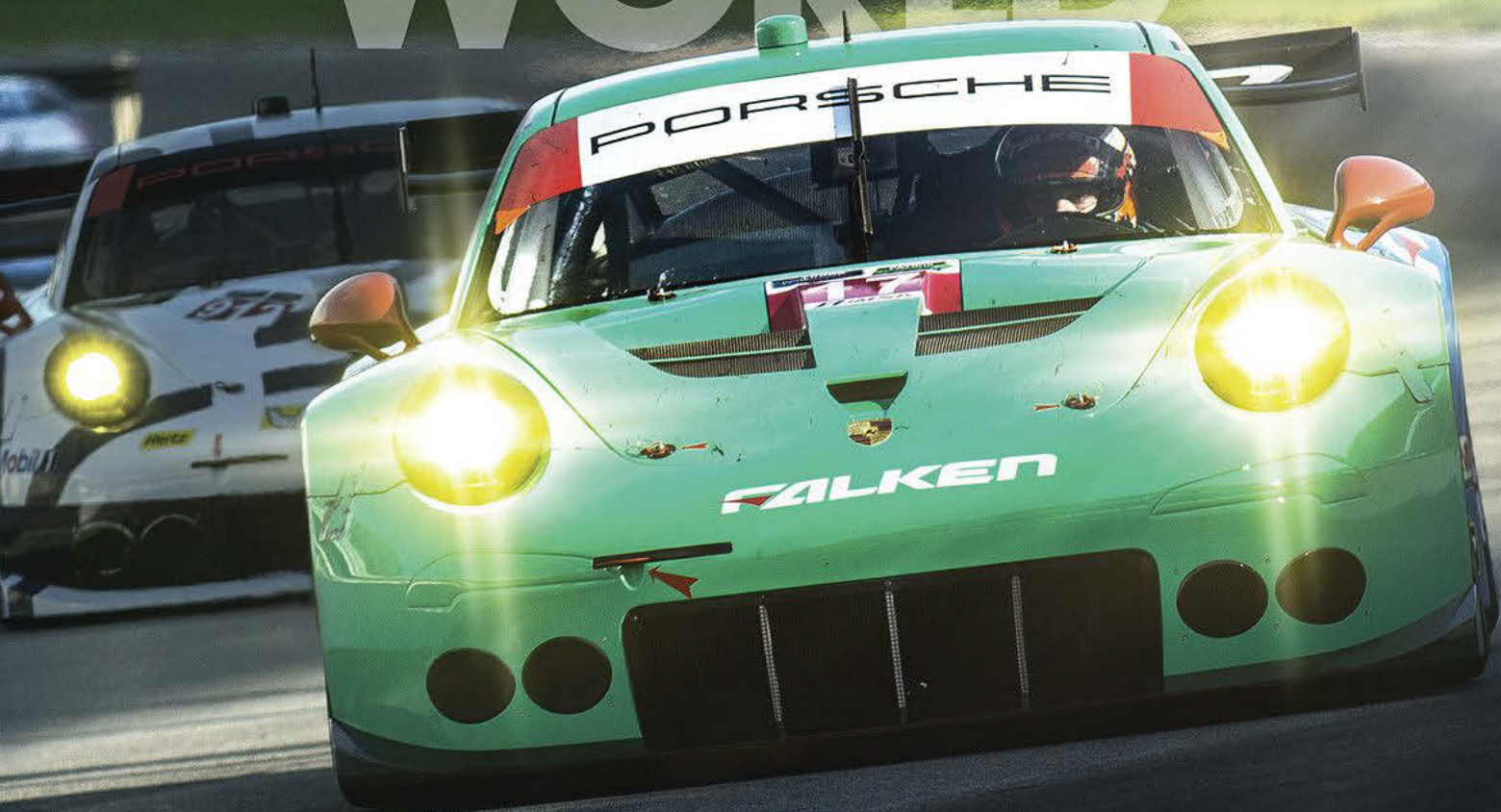
*The AMG GT
was clearly
designed from
the beginning to
take the fight to
the Porsche.*

and the right transmission, and I'm pretty sure you could fit 265-width tires up front to redress that conservative handling balance a bit. No surprise that my father, who, like me, has plenty of air-cooled wheel time, continued to talk about the car long after he'd stepped out of the passenger seat for the last time that day.

The AMG was clearly designed from the beginning to take the fight to the Porsche, from the faux center-lock lug-bolt covers (which, this being Mercedes, have an exact torque specification of 22 lb-ft) to the fastback body shape that looks deliberately 911-esque at a distance. I'm certain it will sway some 911 buyers the same way the Panamera has picked off stragglers from the S-class demographic. But it's no Nine Eleven. So what is it? In the course of enthusing about the AMG's virtues, my Marine aviator friend, Jim, happens to mention another German sports car he's always liked. All of a sudden the realization hits me. V-8 power, wide shoulders, self-shifting transmission, fastback profile . . . Now it makes sense. The 911 Carrera GTS is the best 911 I've seen in a while, and the Mercedes-AMG GT S is a near-perfect successor to a very different Porsche. As I recollect, they called it the 928. ■

PERFORMANCE REPORT, P. 52 ►

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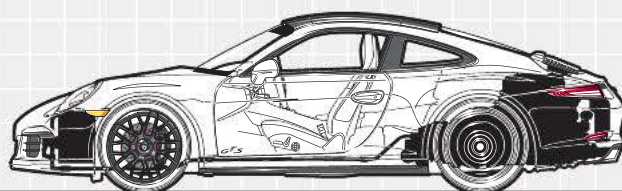
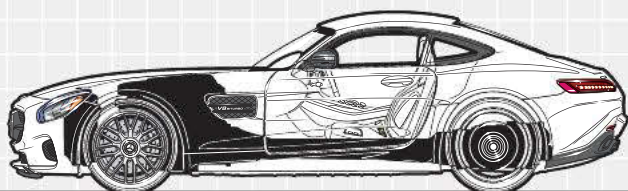
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2016 MERCEDES-AMG GT S

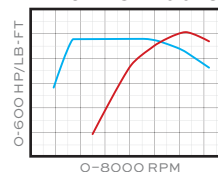
2015 PORSCHE 911 CARRERA GTS



SPECIFICATIONS

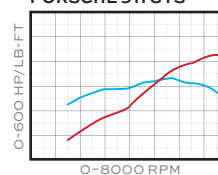
	MERCEDES-AMG GT S	PORSCHE 911 CARRERA GTS
PRICE		
BASE	\$130,825	\$115,195
AS TESTED	\$156,150	\$139,925
ENGINE		
CONFIGURATION	32-valve twin-turbocharged V-8	24-valve H-6
LAYOUT	front, longitudinal	rear, longitudinal
MATERIAL	aluminum block and heads	aluminum block and heads
DISPLACEMENT	3982 cc	3800 cc
BORE x STROKE	83.0 x 92.0 mm	102.0 x 77.5 mm
COMPRESSION RATIO	10.5:1	12.5:1
REDLINE	7000 rpm	7600 rpm
FUEL DELIVERY	direct	direct
TRANSMISSION		
DRIVEN WHEELS	rear	rear
TYPE	7-speed dual-clutch automatic	7-speed manual
FINAL-DRIVE RATIO	3.67:1, limited-slip differential	3.44:1, locking differential
GEAR	RATIO	CALC MAX (RPM)
1	3.40:1	45 mph (7000)
2	2.19:1	70 mph (7000)
3	1.63:1	94 mph (7000)
4	1.29:1	119 mph (7000)
5	1.03:1	149 mph (7000)
6	0.84:1	182 mph (7000)
7	0.63:1	192 mph (5550)
GEAR	RATIO	CALC MAX (RPM)
1	3.91:1	46 mph (7600)
2	2.29:1	78 mph (7600)
3	1.55:1	115 mph (7600)
4	1.30:1	138 mph (7600)
5	1.08:1	166 mph (7600)
6	0.88:1	190 mph (7125)
7	0.71:1	190 mph (5750)
STEERING		
ASSIST	hydraulic	electric
RATIO	14.2:1	16.6:1
TURN, LOCK-TO-LOCK	2.2	2.6
TURNING CIRCLE	37.7 ft	36.4 ft
SUSPENSION		
FRONT, REAR	control arms, control arms	strut-type, multilink
BRAKES & TIRES		
FRONT	15.8-in vented rotors, 6-piston fixed calipers	13.4-in vented rotors, 6-piston fixed calipers
REAR	14.2-in vented rotors, 1-piston sliding caliper	13.0-in vented rotors, 4-piston fixed calipers
TIRES	Michelin Pilot Sport Cup 2	Pirelli P Zero
SIZE	F 265/35R-19, R 295/30R-20	F 245/35R-20, R 305/30R-20
BODY & CHASSIS		
STRUCTURE	unit	unit
MATERIAL	aluminum	aluminum, steel, and magnesium
LENGTH x WIDTH x HEIGHT	179.0 x 76.3 x 50.7 in	177.5 x 72.9 x 50.6 in
WHEELBASE	103.5 in	96.5 in
TRACK, FRONT/REAR	66.3/65.0 in	60.6/61.4 in
DOORS/SEATS	2/2	2/4
EPA CLASS	2-seater	minicompact
CARGO CAPACITY	12.4 ft³	4.4 ft³
DRAG COEFFICIENT	0.36	0.30
FRONTAL AREA	22.9 ft²	22.0 ft²
WEIGHT		
CURB WEIGHT	3683 lb	3341 lb
DISTRIBUTION F/R	47/53%	39/61%
WEIGHT-TO-POWER RATIO	7.3 lb/hp	7.8 lb/hp
FUEL		
EPA CITY/HWY	16/22 mpg	18/26 mpg
FUEL CAPACITY	19.8 gallons	16.9 gallons
FUEL RANGE	436 miles	439 miles
RECOMMENDED FUEL	premium	premium

MERCEDES-AMG GT S



503
PEAK HP (SAE)
@ 6250 RPM
479 LB-FT
PEAK TORQUE @
1750-4750 RPM

PORSCHE 911 GTS



430
PEAK HP (SAE)
@ 7500 RPM
325 LB-FT
PEAK TORQUE @
5750 RPM

TEST RESULTS

	MERCEDES-AMG	PORSCHE
0-60 MPH, SECONDS	3.2	3.8
0-1/4 MILE, SECONDS @ MPH	11.3 @ 125.1	12.3 @ 116.2
TOP SPEED, MPH	192	190
ROAD-HOLDING, G	1.07	1.03

1 FOOT (ROLLOUT)	0.3 sec	0.2 sec
ROLLING START,		
5-60 MPH	3.9	5.1
0-10 MPH	0.3	0.3
0-20	0.8	0.8
0-30	1.3	1.3
0-40	1.8	1.9
0-50	2.5	2.9
0-60	3.2	3.8
0-70	4.0	4.9
0-80	5.0	6.3
0-90	6.0	7.8
0-100	7.3	9.4
0-110	8.7	11.0
0-120	10.4	13.1
0-130	12.3	15.3
0-140	14.6	18.8
0-150	17.5	22.4
TOP SPEED	192 mph	190 mph
(ELEC LTD, MFR) (DRAG-LTD, MFR)		

60-0 MPH	105 ft	107 ft
80-0 MPH	187 ft	189 ft
FADE	none	none

ROADHOLDING	1.07 g	1.03 g
BALANCE	mild understeer	mild understeer

The Mercedes wins handily on acceleration, but the Porsche has wonderful front-to-rear chassis balance.

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THE FIRST DRIVE | 2016 FORD MUSTANG SHELBY GT350 & GT350R

EARNING ITS STRIPES

SHELBY'S ORIGINAL MISSION LIVES ON IN THE ULTIMATE TRACK MUSTANG.

BY COLIN COMER | PHOTOGRAPHY BY ANDREW TRAHAN





OCTOBER 2014: A friend at Ford tells me to “get ready” for a car being introduced at the Los Angeles auto show the following month. He can’t say anything more. The rumor is it’s a new Shelby GT350 Mustang—the rebirth of a hallowed model, dead since 1970. Because I love GT350s and their history, I immediately sell my 1966 K-Code Mustang fastback to fund the purchase of a car I know nothing about, including its cost.

JANUARY 2015: Detroit auto show. The track-focused GT350R and GT supercar debut. Despite sharing minimal information about the GT350R—mostly engine and wheel details—Ford wins the show.

MAY 2015: Ford finally releases the GT350 order form. I obtain one and use it. Still no word on price, but I remain hopeful

it is roughly equivalent to the value of a ’66 K-Code. Meanwhile, my wife changes the locks on our house.

JULY 2015: Ford invites journalists to Michigan’s Grattan Raceway for rides in preproduction GT350s. It’s hot—in the 90s, with choking humidity—but I drive to Grattan from my Wisconsin home, in my unrestored 1965 GT350, because it seems like the thing to do. Short gears, side exhaust, concrete suspension, no A/C: I arrive moderately delirious, nearly melted, and mostly deaf. The new car seems sensational, but Ford’s drivers are purposely lifting during hot laps to keep people from quietly recording times. I throw the keys to my car to Gene Martindale, one of the GT350’s development engineers, and remind him that, unlike the new car, a stock ’65 doesn’t have an 8250-rpm redline. Martindale, later: “I cannot believe how hard-core this car is. They actually sold them like this?”

Exactly. An SCCA B-Production race car with a license plate. That’s one of the great things about a first-year GT350—you

That's one of the great things about a first-year GT350—you know exactly what Shelby's guys wanted the car to be.



know exactly what Shelby's guys wanted the car to be.

AUGUST 2015: The Shelby GT350 Mustang is the featured marque at the Rolex Monterey Motorsports Reunion. A new GT350 is on display, turned on its side on a giant rotisserie. I wander around it for a good half hour. The car's underside looks expensive, more Stuttgart than Detroit. Waiting is really starting to hurt.

A week after the Reunion, I was back in Monterey, at Mazda Raceway Laguna Seca, for the GT350 media drive. Finally.

WITHIN FORD, the GT350's naturally aspirated V-8 is known as "Voodoo." This 5.2-liter, 526-hp, 32-valve engine is a heavy rework of the 5.0-liter "Coyote" found in the current Mustang GT. It was designed for track use, optimized for high rpm, and is found in no other Ford product right now.

The first thing you notice about the GT350 is its sound—every bit as good as those YouTube clips. This is partly thanks to

GT350's legitimization of the Mustang in 1965 helped solidify long-term success of Ford's pony car. Thank you, Carroll.

the engine's 180-degree crankshaft—it features single-plane crankpins, like a modern Ferrari V-8, aiding everything from header plumbing and exhaust scavenging to balance at high rpm. This is a loud,

basso engine. At full throttle in the track-focused GT350R model, windows open, the car makes enough noise that two helmeted passengers can't hear each other yell. It's great.

So-called flat-crank V-8s have been around for decades, but this is the first mass-production American one. Compared with a traditional Detroit V-8 like the Coyote, the Voodoo doesn't have two successive firing events on the same side of the vee at 90 degrees. Without those same-side firings, the Voodoo loses the traditional American V-8 burble, but you gain a snarling, guttural bellow at speed and a thrummy growl at idle, like two four-cylinders joined at the hip.

Internally, the engine is a jewel. Every component, from the gun-drilled crank and short-skirt pistons, to the 10-quart com-

2016 Ford Mustang Shelby GT350R

PRICE \$63,495**ENGINE** DOHC 32-VALVE 5.2-LITER V-8**PEAK OUTPUT** 526 HP @ 7500 RPM, 429 LB-FT @ 4750 RPM**TRANSMISSION** 6-SPEED MANUAL, RWD**L x W x H** 189.7 x 75.9 x 53.6 IN | **WEIGHT** 3650 LB**0-60 MPH** 3.7 SEC (EST) | **TOP SPEED** 175 MPH (EST)
ON SALE NOW

1965 Ford Mustang Shelby GT350

PRICE \$4584 (AS TESTED IN 1965)**ENGINE** 4-BARREL CARBURETED 4.7-LITER V-8**PEAK OUTPUT** 306 HP @ 6000 RPM, 329 LB-FT (EST) @ 4200 RPM**TRANSMISSION** 4-SPEED MANUAL, RWD**L x W x H** 181.6 x 68.2 x 51.2 IN | **WEIGHT** 2790 LB**0-60 MPH** 6.8 SEC | **TOP SPEED** 124 MPH

posite oil pan, was clearly engineered for a specific purpose. Examples: Ford claims 40 percent of the Coyote's internal friction comes from its piston rings, so considerable time was spent developing a low-tension ring package to reduce frictional losses. They also focused on crankcase breathing. In a standard Detroit V-8, cylinders fire in alternating pairs on either side of the engine and whip oil onto the crankshaft, which consumes horsepower. A flat-crank V-8 alternates firings from one bank to the other, greatly reducing windage. But Ford also added a substantial composite windage tray in the oil pan.

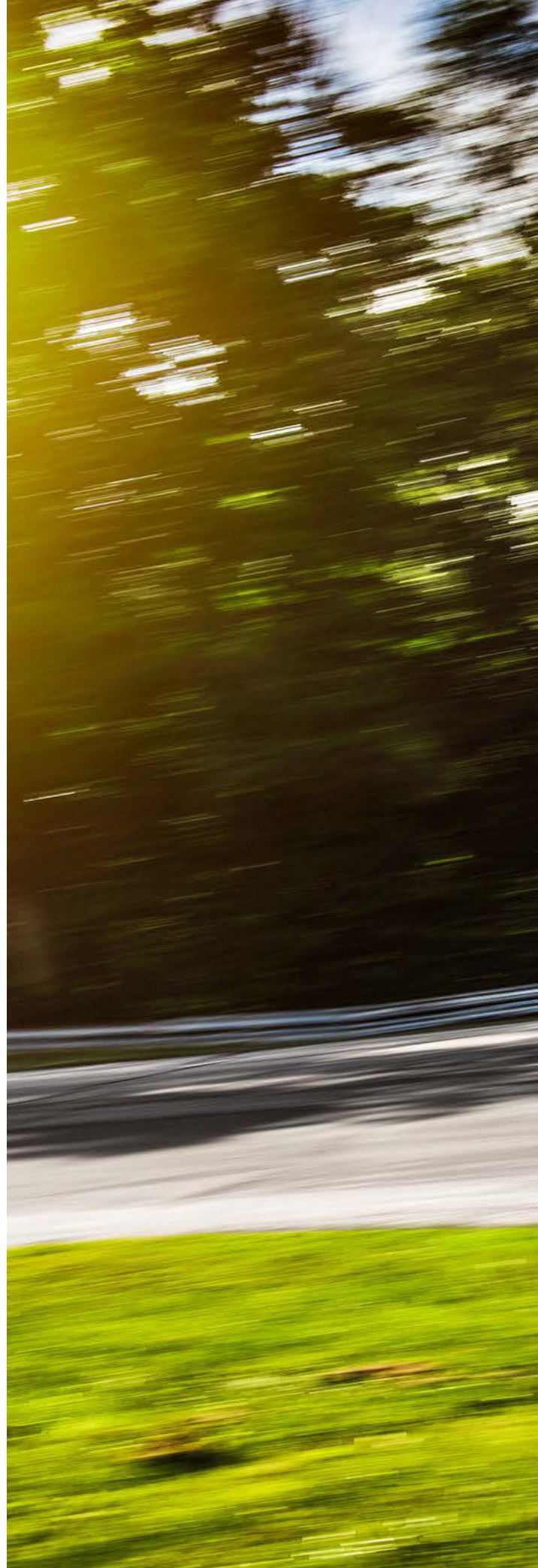
This may seem like minor stuff, but it's the kind of work NASCAR teams do on engines costing more than this car. And it undeniably works. The Voodoo's peak power comes at 7500 rpm, and peak torque, 429 lb-ft, hits at an impressively low 4750 rpm. (Undoubtedly thanks to the engine's variable valve timing, which controls the intake cams and their massive 14 millimeters of lift.) The power curve is absurdly flat, and the engine is astonishingly flexible. Flat-crank motors have a reputation for being peaky, but this one pulls hard, from the basement to the top floor, and never feels strained.

The transmission, a heavily revised Tremec TR3160 six-speed, sits behind a new dual-mass flywheel and a lightweight, twin-disc clutch. Ford obviously wanted a lighter and more rpm-friendly transmission than the balky yet robust TR6060 found in the last (662-hp) Shelby GT500, and the Voodoo's comparatively lower torque allows for that.

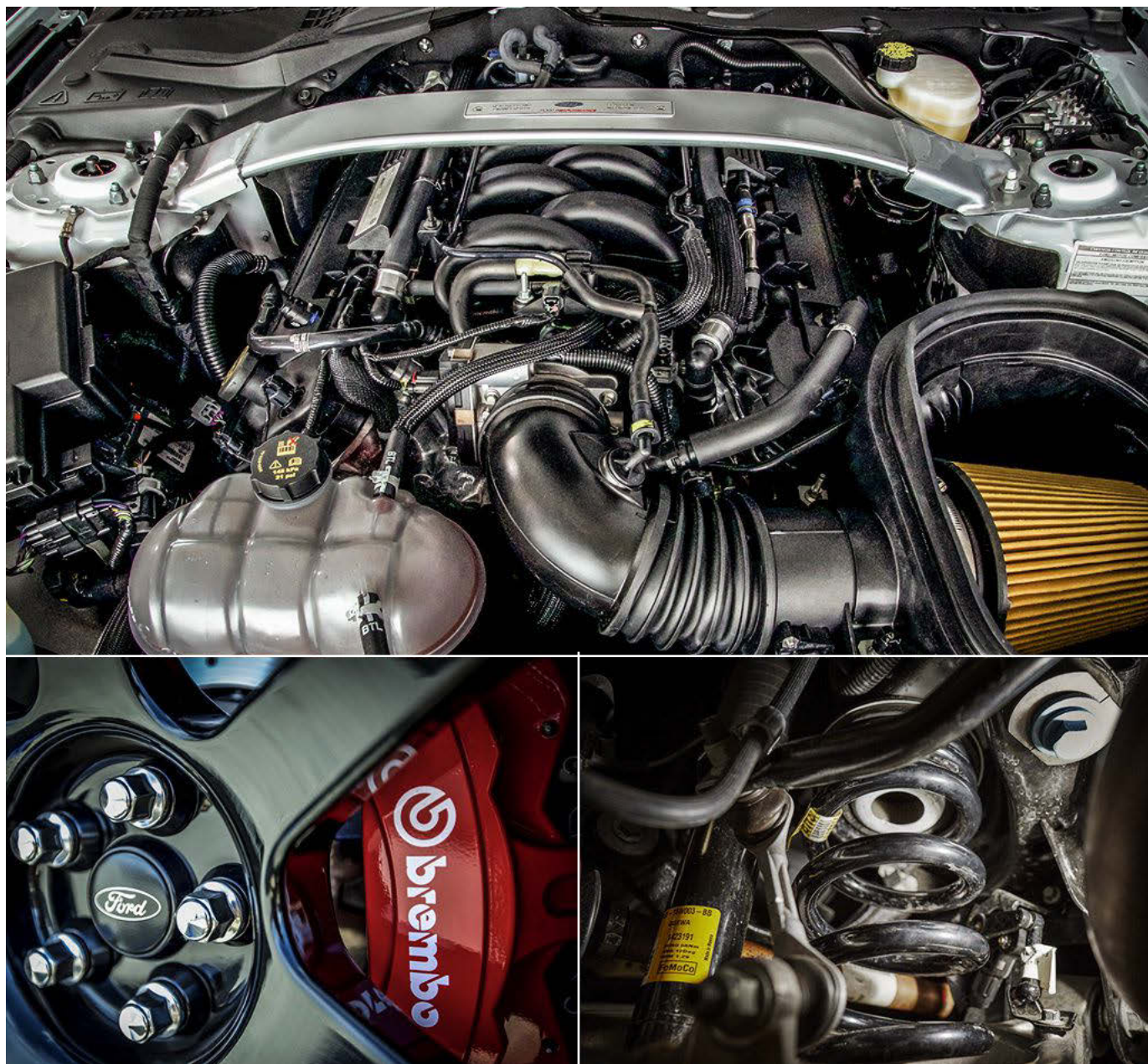
The clutch is surprisingly light, and the transmission shifts precisely, although the trade-off seems to be a slight buzziness transmitted through the shift lever. It's ever-present but not annoying. The Torsen limited-slip diff has a 3.73:1 final-drive ratio. The combined gearing seems perfect, dialed in to keep the engine above its 3500-rpm sweet spot during fast road or quick track driving, and within spitting distance of that torque peak.

Nailing the throttle and grabbing second gear on the stock (and bespoke-compound) Michelin Pilot Super Sports brings enough wheelspin to trigger traction control, even in the system's Sport mode, followed again by rubber in third. The car's engineers say the GT350 was built to be a balanced track car, but seat-of-the-pants feel suggests quarter-mile times solidly in the 12-second range.

Compared with the 5.0-liter in the base Mustang GT, or even the 444-hp version in the 2012-2013 Mustang Boss 302, the GT350 is a different animal. To say nothing of being unlike a traditional Mustang. The car has a shift light in its standard head-







up display; the first time I used it, I thought it was broken. The damn engine just revs forever.

The GT350 is essentially all-new from the A-pillar forward, with flared aluminum fenders and a restyled nose and tail. The front fender vents are functional, helping extract air from the wheel wells. Even the rocker panels are vented to help remove air from under the car. The decklid is adorned with one of three spoilers: a small lip on base cars, a larger lip on track-package models, or a full-on wing on the GT350R.

Ford says a GT350 with the track package weighs about 3800 pounds, but it drives more like its 2800-pound 1965 cousin than you'd think. The new car feels light on its feet, and it doesn't do anything stupid when pavement gets rough. Ford Performance chief engineer Jamal Hameedi and his team worked particularly hard at making the front suspension "right," because, Hameedi says, once you have that on a Mustang, the rear will follow. So the GT350 gets a wider front track and aluminum

"Voodoo" V-8 fills the engine bay. Track-ready Brembos. Rear springs are counterspun to match left to right.

front uprights in place of the standard car's cast-iron units. Adjustable magnetorheological dampers are also included in the track package and standard on the GT350R. They're so incredibly capable and versatile, they should be mandatory equipment.

On the flip side, when you aren't hooning the thing, and the adjustable steering assist, throttle response, and dampers on MagneRide cars are set to what you'd use to take Grandma to church, the GT350 is comfortable and quiet.

Finally, the brakes. Sweet baby Jesus, the brakes. If you need a reason to justify a GT350 purchase beyond that engine, they're it: 15.5-inch, pin-drive floating rotors with radially mounted Brembo six-piston monoblock calipers in front and 15.0-inch floating rotors with four-piston Brembo calipers in the rear. They are astonishingly good, race-quality or better, and unflappable on the road. Ford even engineered special "stiff" front wheel bearings to combat caliper-piston knockback, the bane of road-race brakes, in severe use.

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- Sub Dials: Day / Seconds / 24hr
- Strap type: Tire Track Black Rubber Strap
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At Laguna Seca, first up was a track package car. In Track mode, the chassis was shockingly neutral, with no crazy push like the 2015 Shelby Super Snake we recently tested [“Numbers Game,” October]; no oversteer like the old live-axle, big-horsepower GT500; and zero noticeable intervention from the electronic nannies. The engine loves to spin, and even with that high torque peak, you use the gearbox a lot less than you’d think. Laguna becomes a third- and fourth-gear track.

By way of comparison, I’ve spent many track days in a 2012 Boss 302 Laguna Seca, the most lap-friendly Mustang to date. As fantastic as that car is, the GT350 with the track package is superior. Any good lap in the Boss requires arguing with the car, but the GT350 never complains. And there’s no contest on the brakes.

Next, I climbed into the GT350R. Frankly, I was unprepared for the vast difference between the two cars. Hameedi’s crew claims to have used the Porsche 911 GT3 as one of its bogies, and the Ford is rumored to have equaled the 911’s lap times at a

few high-profile tracks. It’s a good benchmark, and behind the wheel, the Mustang feels about as quick.

There are no resonators in the GT350R’s exhaust system. It’s loud. And it’s perfect. Before you’ve crossed the blend line onto the track, you feel the added grip of the R’s Michelin Pilot Sport Cup 2s, which Ford claims are roughly as sticky as Hoosier R6 DOT-R racing tires, the gold standard in amateur club racing. Those nutty skins are wrapped around R-specific 19-inch carbon-fiber wheels, half an inch wider on both ends, and a set weighs 60 pounds less than equivalent aluminum wheels. [Dissected, page 114.]

Beyond the wheels and tuning, the R has stiffer springs and anti-roll bars and a larger front splitter to balance the rear wing, along with the same engine, transmission, and differential coolers found in the track package. The insides of the front wheels are also treated with a chemical barrier to protect them from heat generated during braking. This is all well and good,



but the R's tech is irrelevant: On a racetrack, the thing lays down pixie dust. It's incredible.

Granted, tires are a large part of the GT350R's goodness. Sport Cup 2s aren't cheap or low-grade rubber, and that goes double when a manufacturer works with Michelin to optimize its compound for a specific car. But you couldn't get here just by hanging those tires on a regular GT350. Nowhere did the car feel unsettled or loose. It doesn't care if you run it up rumble strips, miss a turn-in, or brake far too deep. Slamming down through the Corkscrew with the inside front tire high off the ground, the Ford sticks better than most race cars, and the touchdown is uneventful. The R seems to enjoy it and feels as if it could do it all day, never getting hot, never falling off.

What do the original GT350 and the new one have in common? For starters, they both came out punching above their weight and are each pretty good at it. A base GT350 is \$49,995, with another \$6500 if you want the track package. The GT350R

The latest GT350 is a faithful—yet far more advanced—follower of the original's footsteps.

is \$7000 more still. Not bad for a car that, at first blush, seems a match for a six-figure Porsche.

But chiefly, while the two Fords are vastly different in performance—the new car would undoubtedly murder the old in a direct comparison—they're connected by their critical importance to the Mustang brand. The original gave the car much-needed speed cred at a time when that genuinely mattered for sales. If it hadn't succeeded, the Mustang might have died off, a cute but unimportant footnote in history.

But the first GT350 was a giant-killer. It won championships, and along the way, made Shelby a legitimate manufacturer as much as Shelby made the Mustang a legitimate performance car. The 2016 model is impressive, and its pricing certainly earns Ford entry into the ridiculous-bargain hall of fame. Even better, the new GT350 deserves its name. It's a meticulously engineered device that somehow retains the soul of the original. Worth waiting 11 months for, but also every one of the past 50 years. ■



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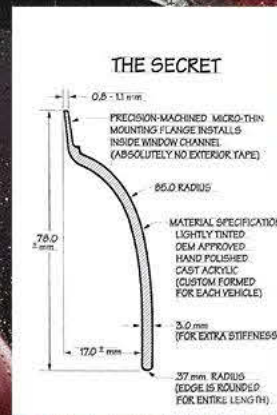
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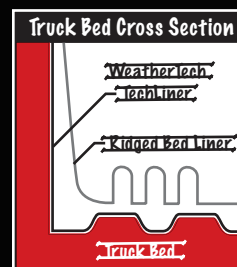
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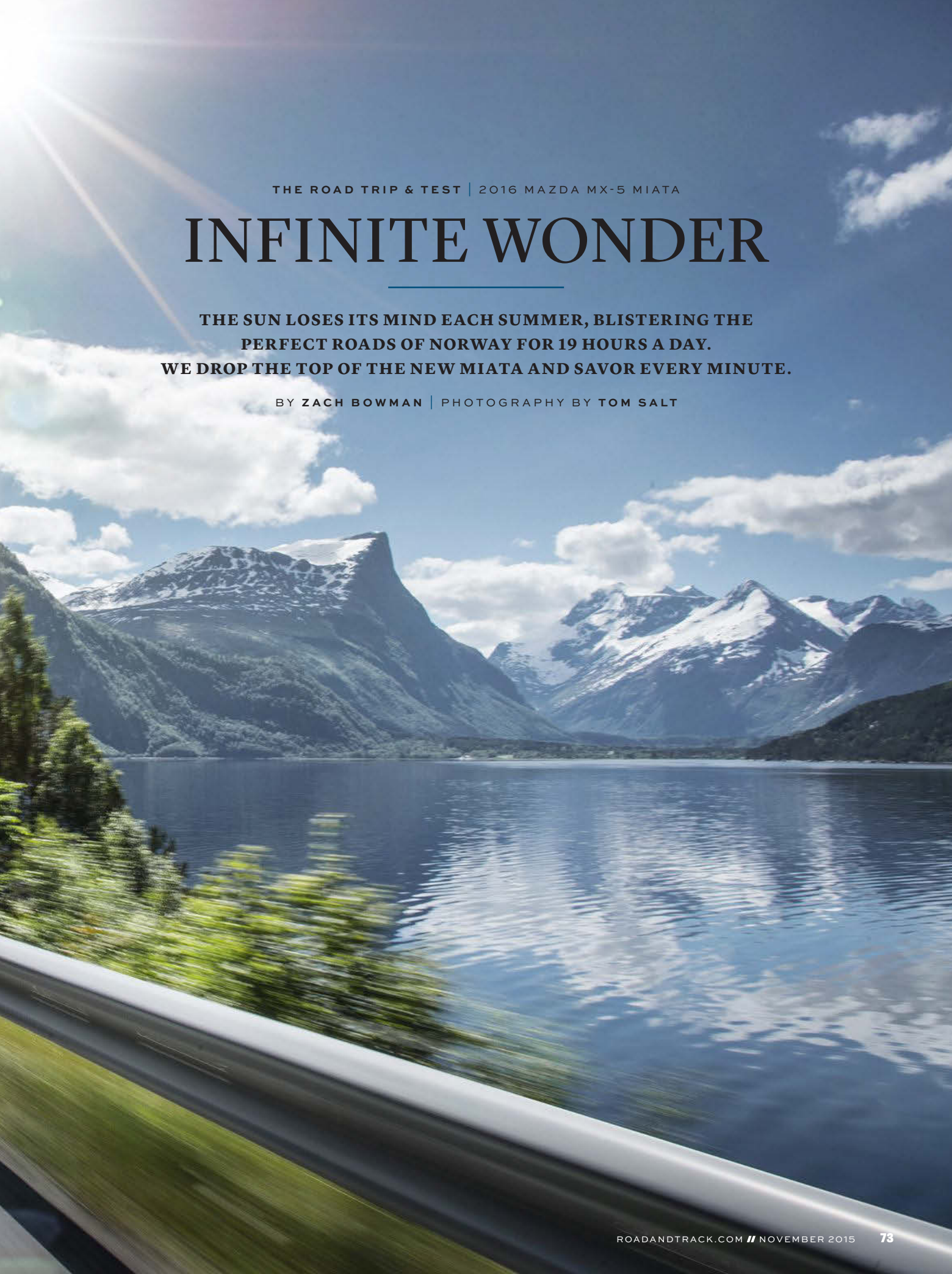
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THE ROAD TRIP & TEST | 2016 MAZDA MX-5 MIATA

INFINITE WONDER

**THE SUN LOSES ITS MIND EACH SUMMER, BLISTERING THE
PERFECT ROADS OF NORWAY FOR 19 HOURS A DAY.
WE DROP THE TOP OF THE NEW MIATA AND SAVOR EVERY MINUTE.**

BY ZACH BOWMAN | PHOTOGRAPHY BY TOM SALT



NORWAY IS A TREASURE. Some of the finest roads in Europe are here, clinging to the black-green water of fjords, scrambling over mountains too young to be gentle, all hidden behind a wall of expense and vicious weather. One week a summer, the sun shines relentlessly over the whole of it, lighting a playground so beautiful, it hurts to recall. What do you do on a day with 19 hours of sun? You get in a Miata, and you drive.

We aim to tackle two of the Northern Hemisphere's legendary routes—Trollstigen and the Atlantic Ocean Road—before charging for the Arctic Circle. The Internet is plastered with images of the gnarled mountain path and the graceful arching

bridges that span from one spit of land to the next. In photos, the roads are abandoned. Empty and waiting for you or me to come tearing through in a perfect convertible.

Max Prince is along for the ride. The bosses want him here as insurance against me driving until my eyes melt. He's a young guy with an affinity for caffeine and nicotine, graced with the kind of admirable disregard for his own well-being I appreciate in a co-pilot. I like the guy. We pick up our Miata, a no-frills model with 12 miles on the odometer, at the Port of Oslo. The top goes down in the width of a thought. For the next two days, the canvas won't go back up under any circumstance. Rain. Snow. Hellish sun. We're committed.

We leave town by early afternoon, but I've made up my mind before we hit the highway: This is the best convertible on sale right now. Light and taut, with a bright 2.0-liter engine that howls to redline like an enlightened incarnation of the breathy



Norway's roads tumble down from jagged peaks to weave their way along the rocky edge of northern Europe.

1600-cc job in the first car. It gets its tongue in your ear, coaxing you sideways through city-center roundabouts and begging, please oh please, for just a little more throttle. The MX-5 grabs eyes from the sidewalks by the armful. Awkward and disjointed in photos, the rounded lines work in the flesh. They need motion and light the way a trout does. I'm in love before the first mile's up, and not just with the concept of The New Miata. With this Miata. An irrational bond to disposable Japanese metal. Mazda's good at that.

We flick our way through villages and dense conifer forests, pop along numerical highways as they march through places with shotgun blasts of consonants and vowels for names. Skimtelflaten. Skrukkelia. Østrønningen. Always toward Lillehammer. There's water everywhere. Still lakes shine through the trees, reflecting sky and cloud and bird and

mountain with just enough imperfection to be real.

There's an architectural cohesion here, too. Stout little houses built to shoulder arctic snows sit like white and red flowers in the rare and ceaseless sun. They look as if they were hewed by the same hand, but the consistency isn't oppressive. Just comfortable. The roads are smooth. There's no trash in the ditches or gaudy billboards on the shoulder. Sheep with brass bells around their necks sleep in bright patches on the tarmac, the deep-earth smell of their wool floating in through the Miata's open top.

It's 10:30 when we finally find our hotel, part of a family theme park outside Lillehammer. The fair-haired girls behind the counter wear traditional Norwegian garb and hand over tickets to a roller coaster with our room keys. We should turn in, but we're wired from the drive, so we sit on the deck instead, drinking and poring over tomorrow's maps until tomorrow becomes today.



There's water everywhere. Still lakes shine through the trees, reflecting sky and cloud and bird and mountain with just enough imperfection to be real.

The morning air is sharp and cool after a quick sleep, and when I rummage a breath from deep in my chest, I watch it leave my lungs in wisps. It's the last remnants of winter, a quiet reminder that deep snow and long nights are never far away. The seasons are a give-and-take here, maybe more so than anywhere else in the world. For every extended summer day, there's a similarly cruel and interminable winter night. I try not to think about it. We get in the Miata, crank the heater as high as it'll go, and point ourselves north.

This car is the great communicator, abandoning stiff springs and absurd damper rates for just the right amount of compli-

ance and movement. There's a little sidewall flex and a taste of body roll. It's exciting, and those skinny tires tell you exactly what's going to happen before the show gets out of hand. It makes for easy, controllable slides that help you look the hero. But there's grip, too. Keep pushing and the Miata will back your play, soaking up a thrashing with neither complaint nor drama.

It's almost noon by the time we make our way to the base of Trollstigen. The road opened in 1936 after eight years of construction, replacing a crooked footpath across the mountains with slightly less crooked pavement. The asphalt scratches its way up a nine percent grade with 11 switchbacks from valley



to pass, ascending some 2000 feet in the process. Engineering by Escher.

We've made a terrible mistake. The road hasn't started climbing before traffic backs up. Big touring bikes laden with luggage squeeze along behind wide Harleys, massive tour buses waddle their way ever upward, and a fleet of camper vans trundles along behind. This is not driving nirvana. It's a new flavor of hell. If we're doing 15 mph, I'd be surprised.

At least it's beautiful. Waterfalls pour from above, the sun lighting their mists iridescent and billowing. The sky is winter blue with just a few white clouds daring the mountains to reach a little higher. From our vantage point in the valley, we can barely make out a set of footprints in the snow at the summit. And there, three tiny humans looking down on us fools waiting in line for the chance to say we drove Norway's most famous road.

We take advantage of a pull-off to park and let traffic roll by. Before I can blink, a bus full of cruise-ship parolees pulls up and unloads. We're surrounded by tourists holding iPads and smartphones at arm's length like offerings to some unseen and demanding god. They're everywhere, and then they're not, gone as quickly as they came. And so are we. We tear out of that valley and make a hard press for the sea.

I want the Atlantic Ocean Road to be better, but when we arrive, there's only more traffic, more tour buses, and a gift shop. In the winter, crashing waves will paint these ink-spot spits of land with ice, but today, the sky is clear and the sea is calm. It's underwhelming, and after spending the better part of 12 hours darting up the arthritic asphalt of the country's interior with the promise of internationally renowned driving, it's a letdown. I toss Prince the key and point him toward Trondheim.

The curved span of the Storseisundet Bridge makes the Atlantic Ocean Road appear to terminate in midair.



Trollstigen is an engineering wonder
best observed with patience.







Someone imagined this machine. It gets those old ghosts going, the memories of Spitfires and Sprites and MGBs long since sold out of your life.

The city's been perched on the rough southern lip of a wide fjord since before our years had four digits, sitting on the same frozen latitude as the less hospitable portions of Canada and Russia. The solstice is a big deal here. It's 1:30 a.m., but the streets are still packed with people in sunglasses and daringly short club wear. We pick a bar with tinted windows and walk into a space adorned with gold AK-47 lamps and the sound of Kanye abusing Daft Punk pounding through the stereo. We've found our people.

Prince fetches a pair of pints and listens patiently as I rant against the absurdity of plodding from one tourist pit to the next. We'd planned to gun for the Arctic Circle tomorrow, but if I see one more gift shop or tour bus, I'll wind up getting a look at Norway's famously excellent prison system. I make a decision. We're done chasing points on the map. Starting tomorrow, we pick the most twisty lines and go where they take us.

NORWAY IS ONE OF THOSE GLORIOUS COUNTRIES whose roads have no interest in the direct route. The old paths course over and around the landscape, as natural and flowing as any stream. The morning leads us south again, and inside of an hour, we're off on a stellar, empty two-lane. One sniff of the real Norway changes everything. The Miata wakes up.

In any other car, 155 hp would be a laughable number, but the Mazda maximizes its muscle. It snaps to its 6800-rpm redline with a yearning pull, lighting the bellwether tingle at the base of your spine that illuminates only when you're doing something that would make your mama nervous. Mat the throttle in sixth and the car responds, a miracle of gearing that makes the constant press for higher horsepower irrelevant.

The road devolves into a tangle of perfections, each bow and sweep of the asphalt revealing a path better than the one before. One moment we're following the banks of glassy water, cool mist splashing onto the road from the snowmelt above, the next, darting feverishly up the side of some ancient and abandoned cliff, the glacier-cut valley below soft and inviting. The Miata can't get enough. The brakes are sublime, crisp and capable and impervious to the abuse of mountain bashing, the flywheel weighted just so for easy-matched downshifts. There's an electric power-steering system on this fourth-gen-

eration Miata, code-named ND, but it's so good that it could pass for hydraulic. I can feel the grit and grip of the weathered mountain pavement through the wheel, the tires chattering in one wicked switchback, then another.

There are tunnels everywhere. Nine hundred of them burrow through the country's cliffs, connecting tiny harbor villages that would take hours to access otherwise. So you go underground, and you might stay there for 15 miles. It's just long enough to forget where you are, until you see the glow of daylight ahead. Your mind's already preparing you for what's on the other side. Mountains, probably. Maybe another gorgeous body of water or wide grassy field. Who can say?

But then you break through, blinking and bright, and the view's more spectacular than the picture you had in your mind. It smacks you in the chest like an open palm. The mountains are higher, reaching up and up until they terminate in impossibly white snow. Waterfalls start as scrambles of ice at their summits before twisting into torrents of rushing water hundreds of feet above the road. Your imagination isn't good enough to fabricate a place like this. No one's is.

Someone imagined this machine. It's no less of a marvel. The seats, the shifter, the blissful size of it—all lessons in the value of smallness. When was the last time you could unlatch the passenger door from where you sit behind the wheel? It gets those old ghosts going, the muscle memories of Spitfires and Sprites and MGBs long since sold out of your life.

The car, the scene, even the dropping temperatures seem made for this moment and this moment alone. Our route has us picking higher and higher, leaving the primary colors of the lowlands below for the charcoal passes of stone and snow above. We speed by maintenance sheds with snowplows bigger and wider than our car, twin impeller screws at their centers like patient teeth. Tall wooden poles stand at attention along the roadside, gray sentinels waiting to mark the edges of the pavement when the snow gets deeper than a grown man is tall. Hard to fathom from the sunny scene before us.

The road contorts into a series of vicious switchbacks carving ever upward, and when we finally break out onto a straight stretch, we're in another universe. There's snow everywhere, piled well above our roofline. We've stumbled onto Galdhøpiggen, at 8100 feet, the highest mountain in northern Europe. It's

Pick any road through Norway's interior, add MX-5, laugh until you cry.

as if the last corner spit us out onto the upper plains of Greenland. The ground's so white it looks blue, marbled with coarse and jagged black stone. A cross-country skier in pink spandex shorts trudges across the fields ahead of us at a determined clip. She's not alone. There's a ski lodge around the bend.

I'm having a hard time processing what I'm seeing. So are the skiers in the lodge's gravel parking lot. The Miata is the definition of foreign up here, and they look at the car like a lonely man looks at your wife. Not with lust, exactly, but with a mix of surprise and maybe a little regret, like it's a glimpse of another life just out of grasp. Prince can't stop laughing as we watch the car slide through the onlookers' iridescent sunglasses. He waves to the crowd, his goofy grin coaxing a smile from the girls standing there. It's all miraculously surreal.

We spend the rest of the day ignoring our maps and driving on roads that tear off into nowhere in particular, mad with fatigue and sunlight and the achingly gorgeous alien landscape around us, the rush of this car the only taste of sanity in our minds. We can't stop wondering at the absurdity of it all, and how those poor bastards at the gift shop will never see it. That's what Miatas have always been good for anyhow, prying your eyes off the horizon and forcing you to be here now, to enjoy where you are as much as the promise of where you're going.

It's hard to talk about this car without turning into a zealot. It'll turn you into a street-corner fool, thumping the owner's manual like it's the only holy text that matters. The Miata's a wonder, a thing from a time when the machines we loved best were light and engaging above all else.

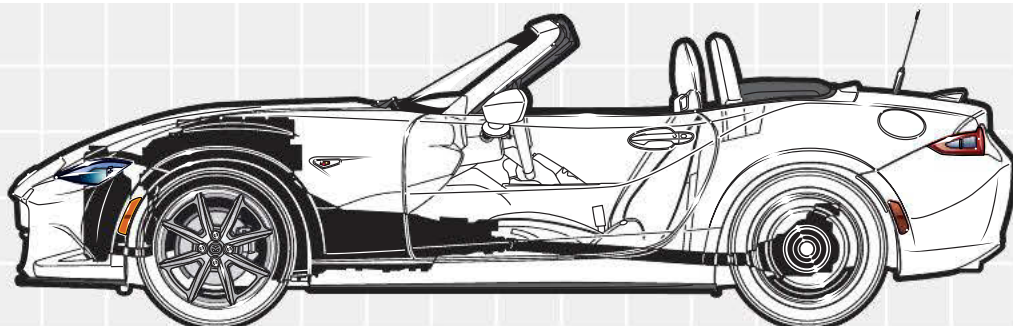
I thought those were all gone. Extinct. We live among the most complex cars in history, machines that contort their every facet at the whim of an algorithm—adjust steering, braking, and damping faster than your neurons can fire. They're unknowable devices, and you spend your time pondering what the car's doing, rather than soaking up your surroundings. This new Miata is good not because it's great, but because so many other sports cars operate under a different definition of good. One that means faster at all costs.

We take a trickling road off the mountain and tumble once more to the green valley floor. The light grows long and golden, splashing over wide water and turning the sharp ridges on the horizon into islands in the distant haze. It's beautiful, exactly why convertibles still exist. Somewhere through it all is a darker note: the hurtful truth that this is one of the handful of good days you're given, and it will end like everything else. The sun may not set, but the hours aren't endless. So we downshift, cling to what we see, and go like hell. ■





OFFICIAL PERFORMANCE TEST REPORT 2016 MAZDA MX-5 MIATA CLUB



SCALE: 10 IN. DIVISIONS
ILLUSTRATION BY TIM BARKER
© ROAD & TRACK/HEARST MAGAZINES

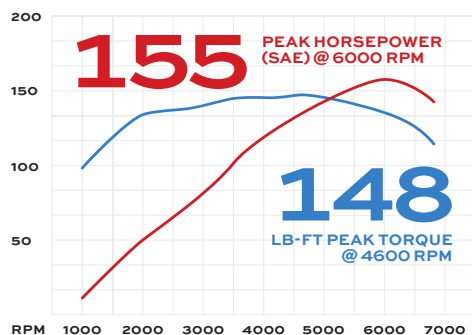
SPECIFICATIONS

PRICE

BASE	\$29,420
AS TESTED	\$33,250

ENGINE

LAYOUT	front, longitudinal
CONFIGURATION	I-4
INDUCTION	naturally aspirated
MATERIAL	aluminum block and head
VALVETRAIN	DOHC, 16 valves
DISPLACEMENT	1998 cc
BORE x STROKE	83.5 x 91.2 mm
COMPRESSION RATIO	13.0:1
REDLINE	6800 rpm
FUEL DELIVERY	direct injection



TRANSMISSION

DRIVEN WHEELS	rear	
TYPE	6-speed manual	
FINAL-DRIVE RATIO	2.87:1, limited-slip differential	
GEAR	RATIO	MAX SPEED (RPM)
1	5.09:1	34 mph (6800)
2	2.99:1	57 mph (6800)
3	2.04:1	84 mph (6800)
4	1.59:1	107 mph (6800)
5	1.29:1	130 mph (6650)
6	1.00:1	130 mph (5175)

STEERING

ASSIST	electric
RATIO	15.5:1
TURNS, LOCK-TO-LOCK	2.7
TURNING CIRCLE	30.8 ft

SUSPENSION

FRONT	control arms
REAR	multilink

BRAKES & TIRES

FRONT	11.0-in vented rotors, 1-piston sliding calipers
REAR	11.0-in rotors, 1-piston sliding calipers
TIRES	Bridgestone Potenza S001
SIZE	205/45R-17

BODY & CHASSIS

CONSTRUCTION	unit
MATERIALS	steel and aluminum
LENGTH	154.1 in
WIDTH	68.3 in
HEIGHT	48.8 in
WHEELBASE	90.9 in
TRACK F/R	58.9/59.2 in
DOORS/SEATS	2/2
EPA CLASS	2-seater
CARGO CAPACITY	4.6 ft ³
DRAG COEFFICIENT	—
FRONTAL AREA	—

WEIGHT

CURB WEIGHT	2313 lb
DISTRIBUTION FRONT/REAR	52/48%
WEIGHT-TO-POWER	14.9 lb/hp

FUEL

EPA CITY/HWY	27/34 mpg
CAPACITY	11.9 gallons
RANGE	405 miles
RECOMMENDED FUEL GRADE	premium

TEST NOTES

- Best launch: rev to 3750-4000 rpm, quickly release the clutch, and let the tires spin. Quick shifts are easy with light throws, but you need third gear to get to 60 mph.
- The brakes got hot and faded just a touch as we finished our stopping test. Pedal feel is superb, with appropriate boost.
- Beautifully balanced machine, a dream to lap around the skidpad. Under steady and light throttle, the front tires give up first, but the torquey two-liter allows for right-foot attitude adjustments.
- The MX-5 is proof that every other car sold today needs to go on a diet. Less is more.

TEST RESULTS

6.1

0-60 MPH, SECONDS

14.7

0-1/4-MILE, SECONDS @ 93.2 MPH

130

TOP SPEED, MPH (EST)



ROADHOLDING, 300-FT SKIDPAD

1 FOOT (ROLLOUT)	0.2 sec
60 FEET	2.1 sec
ROLLING START, 5-60 MPH	7.0 sec
1/4-MILE	14.7 sec @ 93.2 mph
0-10 MPH	0.4 sec
0-20	1.1
0-30	1.8
0-40	3.1
0-50	4.3
0-60	6.1
0-70	8.1
0-80	10.6
0-90	13.5
0-100	17.2
0-110	23.3
0-120	30.9
0-130	—
0-140	—
0-150	—
TOP SPEED (DRAG-LIMITED, EST)	130 mph

BRACING

60-0 MPH	113 ft
80-0 MPH	204 ft
FADE	mild

HANDLING

ROADHOLDING	0.88 g
BALANCE	mild understeer



THE FIRST DRIVE | 2016 GLOBAL MX-5 CUP CAR

GATEWAY DRUG

RACING IS ADDICTIVE. HERE'S YOUR FIRST DOSE.

BY TRAVIS OKULSKI | PHOTOGRAPH BY AL MERION PADRON

MAZDA'S BUILT THE MIATA FOR 26 YEARS. The car has raced all over the world, but there's never been a global series for the roadster. That's all changed. For the first time, competitors in regional events will vie for a world championship, and they'll do it in this machine.

At about 2100 pounds, the Global MX-5 Cup Car weighs less than the last U.S.-spec MX-5 Cup Car and makes similar power. It has a stronger gearbox, lighter transmission coolers and differential housing, a custom exhaust manifold, a gigantic radiator, and, surprisingly, stock brakes from the 2016 Miata Club model, though with new grooved rotors.

Mazda's still tweaking the ECU tuning and suspension package.

It's a ton of fun to drive, and thanks to the weight savings, also quicker. A lot quicker. On the same day, on the Streets of Willow Springs, the new car was a full 2.2 seconds quicker than the previous-gen Cup Car it replaces.

The racer comes with a sealed engine, transmission, and differential to prevent fettling. As Glenn Long, owner of Long Road Racing, Mazda Motorsports' partner in developing the new Cup Car, said, "this should be a driver's car." It's about bringing talent to the fore, not about who has the biggest budget for a team of hotshot mechanics to exploit the package.

The car itself is instantly recognizable as the 2016 Miata, though it sits lower, like a friendly puppy getting ready to



Global MX-5 Cup Car

PRICE \$54,000 (EST)
POWERTRAIN 2.0-LITER I-4,
155-PLUS HP; RWD, 6-SPEED MANUAL
WEIGHT 2100 LB ON SALE NOW

pounce. There's nothing inside but a digital dash, a racing seat, and a smaller wheel. The car may look serious, with its roll cage and big, meaty tires, but it's eminently approachable. The driving experience is pure Miata.

On the tight Streets of Willow Springs, the Cup Car begs to be pushed deeper into each corner. The brakes now have less weight to counter, which means they're more effective than the street car's. But driving slowly is not how you get the best out of a Miata on slicks. You need to wring its neck. The steering is accurate and light, while providing great feedback, and turn-in is crisp. The car displays a neutral attitude and wants to play. The gearbox is direct, the clutch is light, the engine delivers terrific thrust. Throw it into a corner, and the Miata responds

exactly as you'd expect. It darts to the apex, and getting back on the power produces no drama.

Like every Miata racer before it, the newest one is, at its heart, a momentum car. Light brake and steering inputs are your friends, but this isn't a situation where snap oversteer will send you into a wall. If you get loose, it's easy to correct, though every car behind you will pass by as you do so.

Believe it or not, at less than \$55,000, the Global MX-5 Cup Car is not expensive for a turnkey race car, and it's backed by the support of a manufacturer that wants to see racers succeed in its cars and help them progress to the highest levels of motorsport. This is what grassroots motorsport has needed for years, and it's finally here. ■

THE MOTOWN MILE | ACURA TLX-GT RACE CAR

INVASIVE SURGERY

ACURA GUTS ITS FAMILY SEDAN TO BRAWL WITH FERRARI.

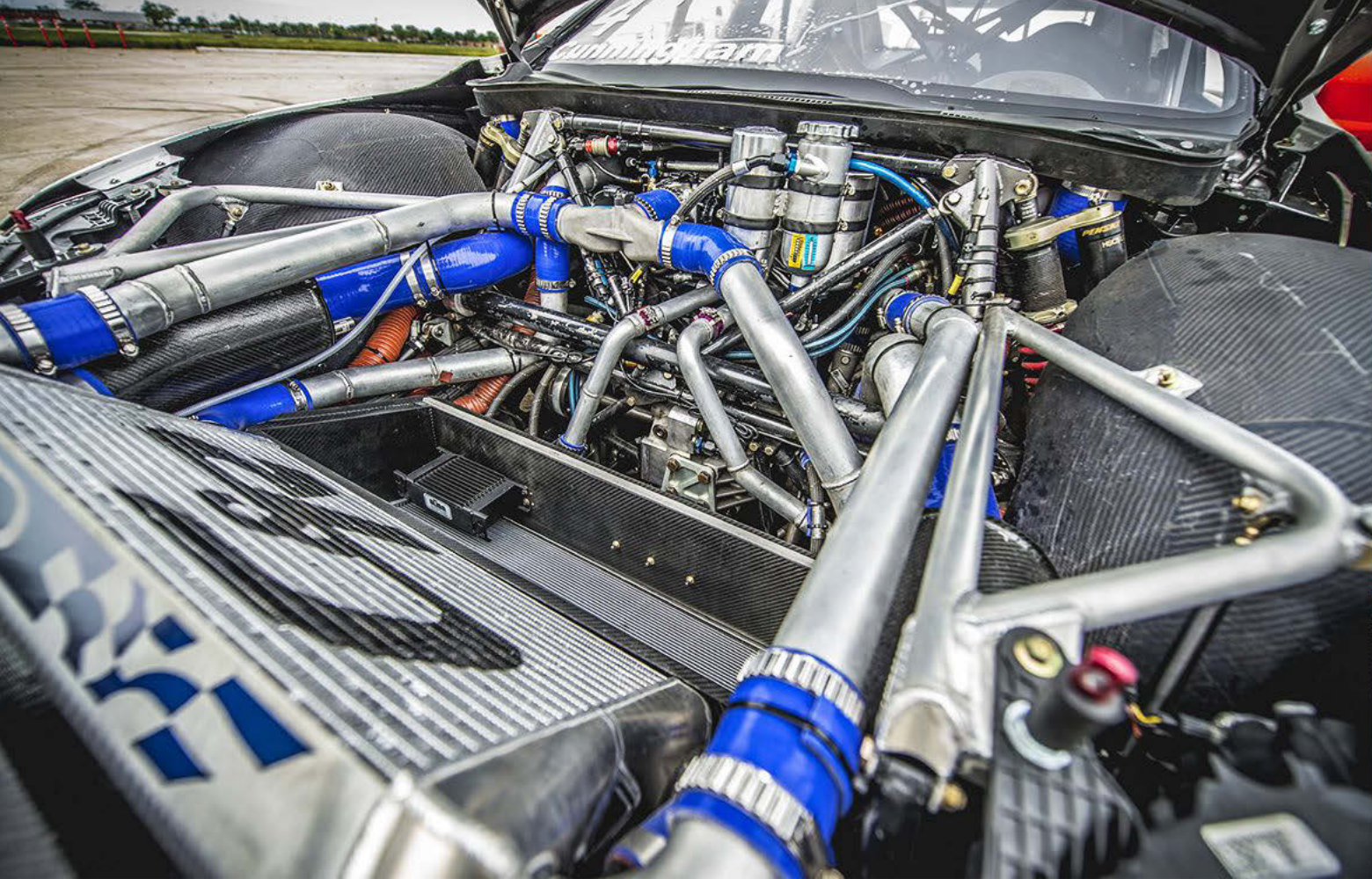
BY LARRY WEBSTER | PHOTOGRAPHY BY ALEX WONG





ACURA | MOTORSPORTS





THE PIRELLI WORLD CHALLENGE is a sprint series—standing-start races with no pit stops. Competitors in six classes bash around courses like Mid-Ohio and the Long Beach Grand Prix circuit. It's designed to produce the kind of chaos you love to see in racing, with combatants in steroid-laden street cars. The GT class is the fastest of the field and includes machines like the Ferrari 458, Mercedes SLS, and Porsche 911. Oh, and this Acura TLX-GT.

Don't laugh. Wisconsinite Peter Cunningham has won 77 races in Hondas and Acuras of almost every ilk, so we asked him to bring his newest ride out to play on our private airport course, the Motown Mile. The car's a 600-hp weapon modified beyond recognition beneath the family sedan's familiar skin.

The number of parts this TLX-GT shares with its streetgoing kin can be counted on one hand—a few badges, the engine block and heads, the unibody passenger cell, and not much else. Pop the hood and all you see is a tangle of silver pipes and radiators diving back toward the firewall. That's where the turbo V-6 lives, tucked so far back, it's hidden beneath the windshield.

The World Challenge TLX-GT is race-car madness, a rolling sculpture of speed engineering. Gotta love it. To see just how far it's removed from its roadgoing counterpart, we paired it against a stock TLX at the Mile. ■



Engineers at Honda's California race shop spun the engine 90 degrees. A pair of turbos and beefier internals help dish out "around 600" hp, but the all-wheel-drive system is what gives the TLX an edge. The 2015 rules allowed Acura to put power to all four corners because the configuration is available from the factory—not that the TLX-GT's AWD hardware is like anything on the lot at your local Acura dealership.

Xtrac adapted an off-road-racing, paddle-shifted transmission and center differential for the Acura. Price? Roughly three times that of a base TLX, or \$110,000.

The engine's location moves everything rearward, including the driver's seat. It's almost a foot farther back than in the street car, and the seat cushion feels like it's on the floor. Don't expect to be able to see over the dash, let alone the fenders.



THE MOTOWN MILE CHALLENGE

With more than double the horsepower, some 700 pounds less weight, and stickier tires, take a guess where the Acura TLX-GT shines against the street car. Here's a hint: everywhere.



148.2 MPH

The race car produces some 1000 pounds of downforce in high-speed turns like our Kink, enabling nearly two g's of neck-straining lateral grip to help maintain speed. The street car? It sees 114 mph.

1.52 G

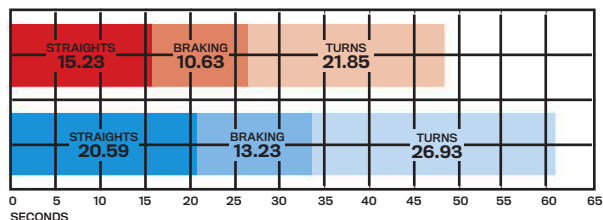
PEAK LATERAL ACCELERATION

Both cars push in tight corners, but the GT is more responsive to trail braking and sticks 50 percent harder.

1182 FEET

At the finish, the race car is nearly a quarter mile ahead.

LAP-TIME BREAKDOWN RACE VS. ROAD



47.71 SEC 60.75 SEC

If the Acura TLX-GT race car and street car ever faced off in a real race, this is what a crushing defeat would look like.

MOTOWN MILE RANKING

1 2015 Acura TLX-GT race car **47.71 sec**

2 2014 Ferrari 458 Speciale **51.92 sec**

3 2015 Nissan GT-R Nismo **51.93 sec**

4 2014 Porsche 911 GT3 **52.18 sec**

5 2015 Dodge Viper SRT TA **52.36 sec**

6 Kia Optima race car **52.42 sec**

7 2013 Ferrari F12berlinetta **52.97 sec**

8 2014 Porsche 911 Turbo S **53.02 sec**

9 2014 Mercedes SLS Black Series **53.66 sec**

10 2014 Nissan GT-R Track Edition **53.76 sec**



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			WET	DRY	WINTER, SNOW	COMFORT	WET	DRY	WINTER, SNOW	COMFORT	WET	DRY			
Ultra High Performance All-Season	1	100%	7.7	8.6	8.5	8.9	9.1	9.1	7.3	6.6	5.7	9.0	9.0	9.3	290,306
Goodyear Eagle Sport All-Season (M-Speed Rating)	2	99%	7.6	8.8	8.9	8.2	8.8	8.2	8.2	7.4	7.1	8.6	8.3	8.1	46,172,520
Continental ExtremeContact DWS	3	97%	8.4	8.7	8.9	8.9	9.1	8.9	7.5	6.0	6.3	8.4	8.2	8.2	987,796
Goodyear Eagle F1 Asymmetric All-Season	4	96%	6.6	8.8	8.9	8.1	8.5	8.5	7.7	6.9	5.7	8.1	8.2	8.4	258,856
Firestone Firehawk Wide Oval AS (M-Speed Rating)	5	95%	7.4	8.6	8.6	8.6	9.1	8.6	7.1	5.6	5.8	8.8	8.6	7.7	1,641,945
Hankook Ventus S1 iRB2	6	94%	7.0	8.6	8.7	8.4	8.8	8.4	7.6	6.4	6.2	8.0	7.1	8.2	5,578,503
General G-MAX AS-03	7	94%	6.1	8.0	8.5	8.3	8.7	8.4	8.5	7.7	7.0	7.0	7.4	6.4	246,500
Dunlop SP Sport Maxx A/S A/S	8	94%	7.8	8.5	8.6	8.8	9.0	8.7	6.6	5.3	5.6	8.5	8.3	7.9	4,067,895
Yokohama ADVAN S-4	9	92%	7.7	8.3	8.3	8.6	8.9	8.6	6.7	5.3	5.7	8.4	8.2	7.7	23,158,180
Pirelli P-Zero Nero M&S	10	92%	6.7	8.0	8.1	8.6	8.8	8.6	7.1	6.2	6.1	8.0	7.4	7.3	9,581,424
Pirelli P-Zero Nero All-Season	11	92%	7.2	8.8	8.9	9.0	9.2	9.0	6.1	4.7	4.6	8.3	7.8	7.5	1,856,329
Michelin Pilot Sport A/S 2 (H or V-Speed Rating)	12	91%	6.8	8.6	8.8	8.8	9.0	8.9	6.0	4.6	4.7	8.0	7.8	8.1	3,861,040
Bridgestone Potenza RE970AS Pole Position	13	88%	7.4	7.7	7.8	8.1	8.5	8.1	6.4	5.3	5.4	8.1	7.9	7.3	40,058,066

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'15 Ford Fusion

215/60R-16 Bridgestone Blizzak WS80
16x7 MSW Type 14



'15 Ford Mustang GT

235/50R-18 Pirelli Winter Sottozero 3
18x8 Sport Edition A11



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Developed to accommodate optional metal studs that enhance ice and hard-packed snow traction. When studded (studding available for \$15 per tire), these tires typically trade some noise and ride comfort for extra ice and packed snow traction. When not studded they provide a low-cost winter tire option.

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16x7 Sport Edition CS1



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255/70R-17 Michelin Latitude X-Ice Xi2
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THE FIRST DRIVE | 2017 AUDI R8 V10 & V10 PLUS

HAWK ON SPARROW

**RECOGNIZABLE TRAITS: RAUCOUS V-10, BALANCE, POISE.
GONE MISSING: YET ANOTHER CLUTCH PEDAL.**

WHEN YOU JAB A FINGER on the red start button on the steering wheel of Audi's all-new R8, the 5.2-liter V-10 awakes with a quick blip to 2500 rpm, producing a brief blast of sound that tells everyone within earshot to pay attention.

That's just for pedestrians. Other motorists are treated either to the sight of the R8's sharp new front end, with its sculpted headlights and better-integrated single-frame grille, or to the wide tail, with its trapezoidal tailpipes and—on the 610-hp V10 Plus—a carbon-fiber spoiler. Many drivers will see both ends, since this car closes in on normal automobiles like a hawk diving on a sparrow. Its extraordinary grip, braking potential, and catapult-like acceleration make very high rates of speed seem not only normal for a public road, but entirely appropriate.

Predictably, the usual new-car drumbeat applies to this second-generation R8: lighter, faster, more fuel efficient, and better equipped. The 2017 R8 will also be far more expensive, since the previous generation's V-8 model, which started at less than \$120,000, has been dropped. We'd guess that the new base car, boasting a 540-hp version of the Audi/Lamborghini V-10, will cost at least \$160,000, and the 610-hp V10 Plus will surely kiss \$200,000. But if the R8 isn't the mid-engine supercar bargain it once was, it will still be some \$50,000 cheaper than the nearly mechanically identical Lamborghini Huracán. (Audi's mum on U.S. pricing and future powertrain variants, but we expect a turbo five- or six-cylinder option within a couple of years and a corresponding shaving of entry price.)

The R8's new look is a winner. While the fore and aft changes are in keeping with Audi's evolutionary tendencies, refining and modernizing the already dramatic appearance, the greatest



visual improvement is probably in profile. The old car's single carbon "side blade" behind each door has been divided by a sweep of bodywork that runs uninterrupted from the door to the rear quarter. The old blade was intended to camouflage the car's long tail. This treatment does the job so much better.

Accompanying the sharpened exterior is a new aluminum and carbon-fiber structure that contributes to lighter weight (the Euro-spec car weighs about 3450 pounds) and a claimed 40 percent increase in rigidity. Audi engineers took the redesign as an opportunity to provide aluminum suspension pickup points, and they also chose to use a carbon-fiber firewall that acts as a rear roof support.

We first tried the base car and found it astonishingly capable as it rocketed to its 8500-rpm redline with alacrity, then snapped

Audi R8 V10 Plus

PRICE \$190,000 (EST)

POWERTRAIN

5.2-LITER V-10, 610 HP, 413 LB-FT; AWD, 7-SPEED AUTOMATIC

WEIGHT 3450 LB

0-62 MPH 3.2 SEC

TOP SPEED 205 MPH

ON SALE SPRING

off upshifts in fast and seamless fashion. The first-gen R8's lovely gated six-speed manual is gone. The revised seven-speed dual-clutch is now the only transmission and the best of its kind, despite the many design challenges Audi says it posed. Because the V-10 is a low-slung, dry-sump monster, the transmission had to have a very low profile. This resulted in three separate oil levels being serviced by one mechanical pump. With the assistance of clever software, shifts take just 170 milliseconds in

normal use and only 120 ms in Performance mode.

That mode—optional on the base car, standard on the V10 Plus—is selected by a checkered button on the steering wheel and includes separate calibrations for dry, wet, and wintry conditions. When we drove the R8 during its media launch, at the track in Portimão, Portugal, a stab at the checkers pulled up a



Virtual cockpit shows driver what's ahead at Portimão.

big tachometer on the car's 12-inch TFT display, reducing other information to the background. The virtual cockpit, as Audi calls it, can be configured in numerous ways. One of the best, we thought, while strafing the countryside around the Algarve, was a wide-screen navigational view that provided an excellent idea of upcoming corners.

It's hard to overstate just how easy this new R8 is to drive quickly. With an electronically controlled version of Audi's Quattro all-wheel-drive system worrying about traction at both axles (and able to transfer 100 percent of the engine's available torque to either axle, thanks to a multiplate clutch pack), an available magnetorheological damper system, a torque-vectoring system, and optional dynamic steering checking the driver's inputs, much is taken care of for you. You get the feeling that you probably can't screw up things badly enough to trigger the car's traction- or stability-control systems.

Since Audi claims a 0–60 time of about three seconds and a top speed of 205 mph for the V10 Plus, it's comforting to know those electronic saviors are at hand. But really, the R8's balance, poise, and towering performance envelope are the most easily recognized characteristics carried over from the old car, and they provide ample assurance to any half-decent driver. Portimão, for

example, has a couple blind corners, both reached at meaningful velocities. When you're new to a track and can't be sure whether the corner beyond the next brow goes right or left, or is tight or sweeping, it's reassuring to know that you can exploit crushing deceleration from the carbon-ceramic brakes (standard on V10 Plus, otherwise optional) without lockup or fade, then trail off them to find some kind of a cornering line.

The sound of that V-10 at track speeds is a lot more inspiring than we remember the previous R8's V-10 to be. Perhaps you can't really appreciate it short of sustained high-rpm vocalization. Critics have complained that the R8 has a less dramatic sound than its mechanical twin, the Huracán, but think of the benefits on a 400-mile trip. A quiet environment and a respectably smooth ride will give way to a more expressive exhaust note and a much firmer, more responsive demeanor when called for, but modern supercars have access to technology that provides the best of both worlds.

Audi is also producing the R8 LMS, a GT3-spec racer, off the same platform [Go, page 10]. That rear-wheel-drive version's V-10 makes less power than the top-tier street car—up to 585 hp, as dictated by racing regulations—but it was enough to win the 2015 Nürburgring 24-hour race in May. —BARRY WINFIELD



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*Horsepower claim based on manufacturer published specifications. Class defined as the 2016 Audi A3 e-tron, 2015 BMW i3, 2015 Lexus CT, 2015 Chevrolet Volt, 2014 Honda Accord PHEV, 2015 Ford C-MAX, 2015 Nissan LEAF, 2015 Toyota Prius and the 2015 Mercedes-Benz B-Class ED. "Audi," "e-tron," "Truth in Engineering," all model names, and the four rings logo are registered trademarks of AUDI AG. ©2015 Audi of America, Inc.



THE FIRST DRIVE | 2017 LOTUS EVORA 400

LIGHTER, FASTER, BETTER

THE BEST-SOUNDING LOTUS IN NEARLY 50 YEARS.

SIDELINED FIVE YEARS AGO in Lotus's short-lived, tragicomic plan to produce a string of reimagined cars out of thin air, the Evora is back with a bang, pop, and a *waaaaaaaahhh!* from its new sport exhaust.

The Evora 400 isn't just the best-sounding Lotus since Hethel stopped fitting Weber sidedraft carbs to its U.S.-bound Elans in 1968, it's the fastest production Lotus road car ever, with a claimed top speed of 186 mph. The 400 badge refers to the number of ponies, an increase of 55 hp over the old Evora S, made possible by a new charge cooler and a larger supercharger. Torque increases 7 lb-ft, to 302 lb-ft, available between 3500 and 6500 rpm. Five grand is where the real action starts, but 2000 rpm later, it's all over. Even in Race mode, you can switch off the active exhaust for stealth attacks on roads lousy with police.

The Toyota V-6 still isn't a charismatic engine, but it's more engaging and mated to two improved transmissions. The six-speed manual gearshift—as before, knucklier than a skeleton's hand—feels meatier and shorter-of-throw. Although the six-speed automatic, a traditional torque-converter slusher, is no match for a Porsche PDK, shift times have been more than halved.

The Evora's straight-line lunge is now more pronounced, but that's almost incidental to the car's behavior in curves. The steering rack remains hydraulically assisted and full of feel, there are stiffer springs and dampers, and curb weight is down

almost 100 pounds. You notice the better body control during transitions and under braking; the massive increase in mechanical grip, everywhere.

Flatten the right pedal as you sail past an apex and the combination of Michelin Pilot Super Sports, clever four-mode stability control, and a limited-slip diff—previously avoided by Lotus for loss of purity but essential at this power level—means there's barely a wiggle from the rear. No wonder a factory test driver

was able to cut seven seconds from the old Evora's 1:38 lap time at the Lotus test track in Hethel.

Most significant, the cabin has been transformed, with instrument graphics that are actually legible, a wider footwell, and longer seat travel for the new lightweight Sparco buckets, a lowered sill that makes it easier to get out, and door panels that no longer crush your kneecaps when you're doing so. You still have to put up with a fiddly aftermarket infotainment unit, but the switches, surfaces, and dials are all light-years ahead of past Lotuses—if

still not up to Porsche standards. That stuff tends to matter to people spending \$90,000 on a car, and it'll certainly matter to the next generation of buyers Lotus wants to woo.

Lotus chief Jean-Marc Gales assures us that some of the quality glitches in our two test cars (transmission chatter and wind noise from the driver's door) will be fixed on production cars. We'll give him the benefit of the doubt. After all, that's what loving Lotus has always been about, right? —CHRIS CHILTON

Lotus Evora 400

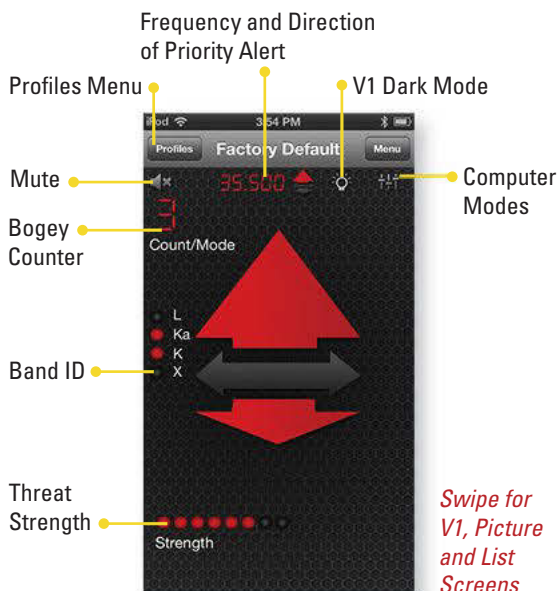
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POWERTRAIN 3.5-LITER
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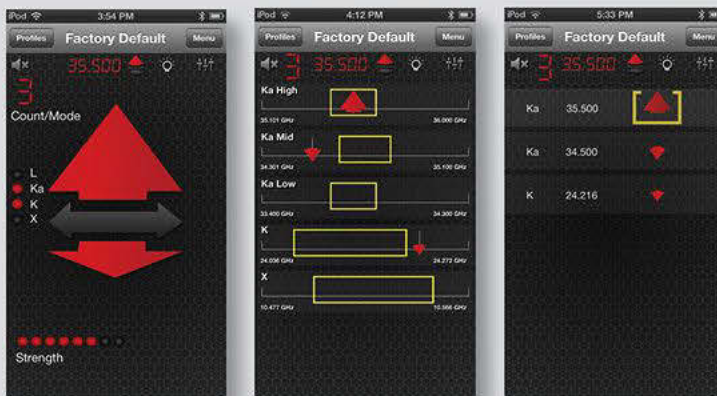
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The ACR variant, for American Club Racer, exists so that V-10-loving humans can hit a road course and tell lesser Viper owners where to shove it. For 2016, the badge brings aero and suspension upgrades, but the base car's 8.4-liter and six-speed manual (60 mph in first gear) carry over. Claimed top speed drops, from the 206 mph of the entry-level Viper SRT, to 177.

If that last bit is relevant to you, you either live in Germany or are lying. But! Dodge says more than 300 hours of wind-tunnel time were devoted to the ACR's elephantine rear wing. Order the optional Extreme Aero package, you get additional dive planes, removable fender louvers, a detachable front-splitter extension, and wing stanchions so tall as to be almost pornographic. Spring rates rise, from the base Viper's 200/500-pound units, front and rear, to 600/1300. Anti-roll bars are shared with the Viper TA. The spring perches adjust for corner-weighting, and you can tweak bump and rebound on the remote-reservoir Bilsteins. If you think you know what you're doing, you can change wing angle.

Dodge Viper ACR

PRICE \$122,490
POWERTRAIN
 8.4-LITER V-10,
 645 HP, 600 LB-FT;
 RWD, 6-SPEED MANUAL
WEIGHT 3350 LB
ON SALE NOW

"It's very possible to screw this car up," a Dodge engineer said at the car's media launch. A beat later, he added, "A lot."

That launch was held at Virginia International Raceway. The ACR's carbon-ceramic Brembos, unique to the model, stopped the car consistently from triple digits. Also without the long, occasionally mushy pedal of an iron-rotor Viper. The V-10, as ever, sounds raspy and grating, like dump trucks mating. But there is noticeable downforce in fast corners, and Dodge claims to have prioritized aero grip that doesn't evaporate with yaw. It seems believable, and the chassis is so approachable, sliding isn't spooky. (It takes testicular presence, but it happens.) The only nerve-racking part is the absence of a roll cage and harness, because 130-mph corner exits are a real possibility.

Incidentally, through Dodge's "1 of 1" program, you can order an ACR with à la carte cosmetics. You then get a "Custom design by" dash plaque with 26 characters' worth of blank space, factory-printed to your request. (Suggestions: BIG SNAKE FOR PRESIDENT; HE WHO EATS THE MEAT.) You have to assume that Viper owners like that sort of thing. Also maybe ordering the entire menu at a Ruth's Chris Steak House and applying it directly to their face.

The ACR is that kind of medieval excess. It lives seemingly in spite of reason, public highways, itself. If you want the meanest version, you're probably already in line. Go with God, you beast. We salute you.

—SAM SMITH



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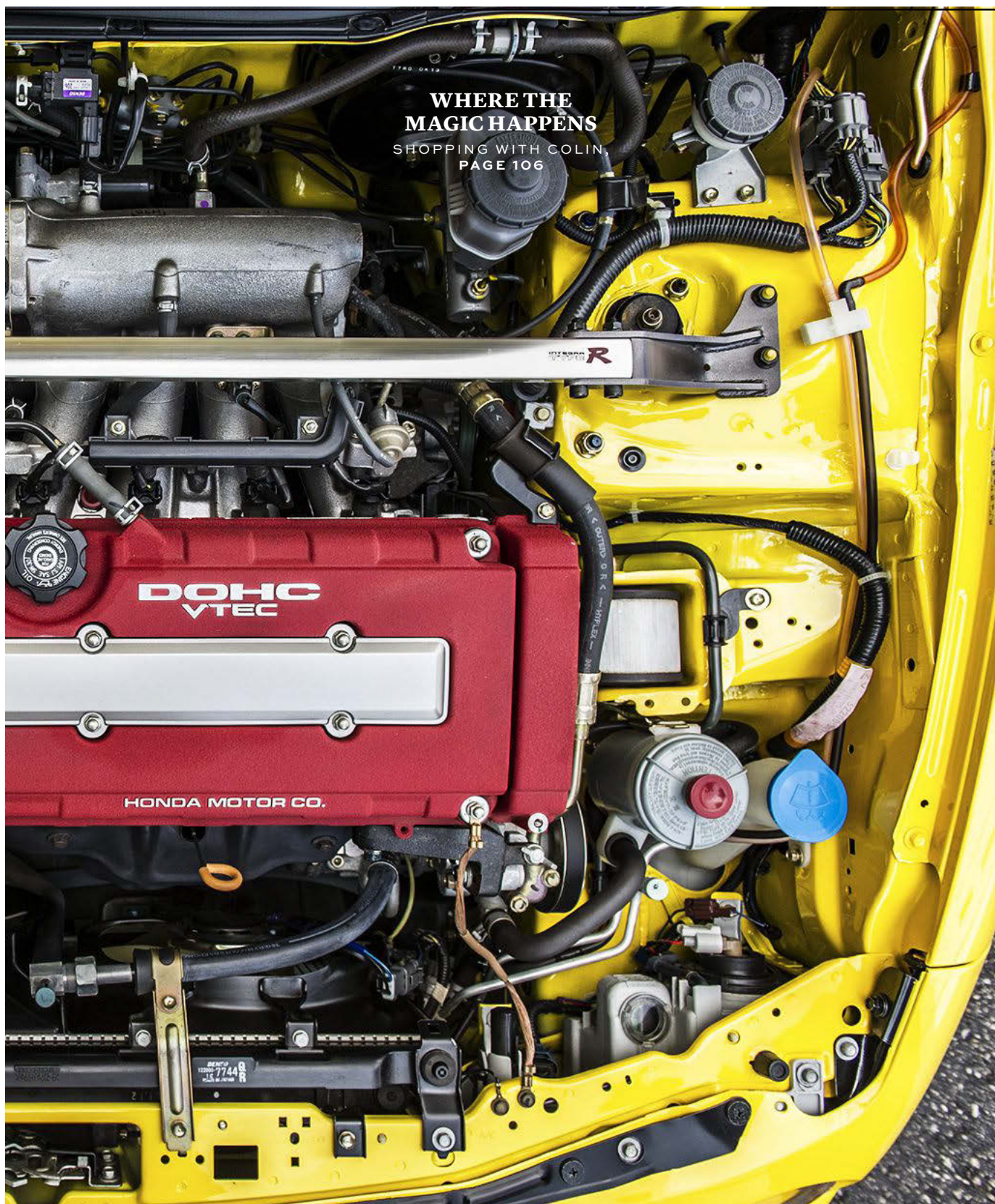


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SHOPPING WITH COLIN

ACURA INTEGRA TYPE R

A SECOND CHANCE AT THE HOTTEST OF HONDA HATCHES.



In 1996, I had an Acura Integra GS-R, a car I bought lightly used at a wholesale auction for about \$12,000. It was a fantastic daily conveyance, with a 170-hp VTEC engine, a great shifter, and good seats. It was as reliable as the day is long, and it also became a competent ice racer with a set of Hakkapeliitta winter tires. It helped me act, at least in part, like a responsible adult.

Then Acura screwed with my head by introducing the 1997 Integra Type R. It was a stripped-down, lightweight, heavily modified version of my now-lame GS-R. The Type R got 195 hp from its 1.8-liter inline-four, more horsepower per liter than the Ferrari F355, a fact not lost on the media at the time. The new Integra also weighed 90 pounds less than the GS-R and used 84 percent of its 10,000-rpm tachometer. If it's crazy now, it was crazier in 1996.

It was also \$24,000 new. Air-conditioning was a dealer-installed option. I test-drove one, and it was a revelation, a hooligan—a completely different car from my GS-R. At 5700 rpm, the VTEC (an ingenious system to adjust valve timing and lift) would kick in the way the *Fast and the Furious* franchise wants you to believe it does on other cars, releasing a sound angrier than most superbikes'. Yet somehow, I didn't buy a Type R. Beyond the \$24,000, which I didn't have, I envisioned my Wisconsin-to-Illinois commute being a little more suited to a cheaper Integra with sound deadening.

But that doesn't mean I don't have regrets, and nothing cures those like

buying a car. The problem is, few Type Rs were built in the four years it was available in the U.S. In 1997, there were 320 cars; in 1998, 1002. The Type R took a hiatus in 1999, and 2000 brought 1355, followed by 1173 in 2001. Trying to find a good Type R today is tough. Beyond being thrashed by owners, the Type R was sought after by thieves, often for its valuable organs. And, if you're into picking colors, it was only available in white for the first two years. The 2000 and 2001 cars only came in yellow or black.

After missing out on a first-year Type R on eBay recently, I heard of a yellow 2001 car with 4500 miles. The seller, the original owner, said it had never been wet, and I believed him. It was one of those cars you'd feel guilty driving with your shoes on. The top market price for a "new" 2001 should be about \$35,000, but this car's owner knew he had something special. He wanted \$45,000. I just couldn't bring myself to spend the money on a car I would feel guilty for driving. So I passed. Will I regret it as much as I regretted not buying a new one in 1996? Maybe. But just seeing the car might also have been the cheapest way for me to rekindle my love affair with one of the most focused hot hatches of all time and one of the best Acuras Honda's ever built. ■

Contributing editor and author Colin Comer is R&T's chief vintage-car buff.

WHAT TO LOOK FOR:

IT'S A HONDA The Integra Type R, like most Honda products of the period, does not have any major quality or reliability issues. Even Type Rs with lots of hard miles tend to have aged well. Again, Honda.



AVOID THE AFTERMARKET Watch for signs of previous forced induction, as well as nonstock cams, headers, coil-over shocks, etc. Some modifications,

like those involving Mugen components, were high quality, but none were as well-sorted as the original parts. The Type R was also one of a few front-drive cars with daringly neutral handling that could catch the unskilled by surprise—many

that were not stolen were wrecked. Look out for salvage titles and signs of major repairs. Check for factory VIN stickers on all body panels.

SWEAT THE TYPE R DETAILS Because many Integra Type Rs were stolen for their engines, make sure the engine and transmission VINs match the car's. The engine should also have a B18C5 engine stamp, whereas Japanese domestic-market cars had only B18C. Look for the Type R badge on the center console.

Genuine Type Rs have five-lug wheel hubs, while many cars recovered from theft ended up with four-lug. And if you run across a 1997 model with a rear wiper, beware; it didn't have one from the factory, and its presence is another indicator of a car with a story, and probably not a happy one.

VERDICT Pass. As fascinated as I was by this like-new example, I couldn't see paying a premium for its mileage and condition only to erase both. Even the chance to relive my youthful aspirations wasn't enough for me to cough up \$45,000. That said, I'm sure I'll regret it, since these unique and insanely focused cars represent the next generation of collecting, and examples like this will soon be extinct.





DRIVER'S ED

THE CONVERTIBLE CONUNDRUM

NOT ALL ROADSTERS ARE CREATED EQUALLY IN THE EYES OF A TECH INSPECTOR.

Track-day organizers are first and foremost concerned with your safety, and convertibles may have little in the way of rollover protection. So how do you know if your car's going to get the side-eye from a tech inspector when you show up for a NASA High Performance Driving Event or SCCA Track Night in America?

Unless you're competing in an honest-to-glory, checkers-and-podium race, you don't need a full cage or a five-point harness. If you were, there would be a whole passel of rules to adhere to

concerning the structure and design of your cage. But entry-level events are designed to be as low-hassle as possible. So if you don't need a jungle gym in your car, what *do* you need?

That all depends on what and where you drive. Jerry Kunzman, executive director at the National Auto Sport Association, says NASA requires drivers to provide documentation that indicates whether the windshield frame and factory rollover protection will support the car if it flips. You can find that information in your owner's manual.

According to Honda and Porsche, cars

like the S2000 and Boxster both indicate that the windshield frame is structural and will help maintain passenger-cell integrity in the event of a roll. But not all convertibles make that claim. Notably absent from that list? The Mazda Miata.

John Bauer, club racing technical manager with SCCA, says that without documentation, tech inspectors will assume the car can't keep from squishing you.

"Then you have to install some sort of roll bar."

Better safe than pancaked.

—ZACH BOWMAN

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ONE DIRECTION

TESLA'S DIRECT-SALES GAMBIT WOULD BE NOTHING WITHOUT ITS CARS.

In the seven years since it delivered its first EV, Tesla has managed to circumvent legal barriers to direct factory-to-consumer sales in state after state, despite concerted opposition from established dealer groups. Backed by surveys showing strong public support, Tesla chairman Elon Musk mobilized acolytes through social media, even summoning them to a public demonstration in New Jersey's capital when that state banned sales of Teslas at company stores. The effort paid off when the state Senate passed, and Governor Chris Christie signed, a bill allowing Tesla to sell cars at four locations in the state. Similar exemptions to franchise requirements, often limited to Tesla alone, were carved out in other states.

Tesla currently owns and operates 102 retail outlets in North America, almost half of which are full sales-and-service centers. The others are mostly retail stores, often in malls, and a few are "galleries," where discussing prices, taking orders, and offering test drives are all prohibited. The company also sells online and by phone.

Tesla insists that its desire to cut out the middleman and deal directly with customers is something noble, part of spreading the electric-car gospel. Its owners are often champions of the company, and Tesla offers incentives for referrals, another practice that troubles regulators.

Even so, other Silicon Valley innovators and free-market advocates enthuse over Tesla's retail approach, a sentiment represented by a May editorial blog post from three Federal Trade Commission directors titled "Direct-to-Consumer Auto Sales: It's Not Just about Tesla." In it, they argue that "states should allow consumers to choose not only the cars they buy, but also how they buy them." The piece also notes that Elio Motors, a startup with plans to manufacture enclosed three-wheeled vehicles, intends to conduct direct sales.

But don't expect the automotive establishment to line up behind the newcomers. Analysts say there is little chance of the big car companies resuming direct sales after the withering results of their past experiments. In 1998, Ford established Ford Auto Collections in five mid-sized markets, and a year later, GM stunned dealers with a plan to set up its own network, which was

to own and operate up to 10 percent of its 7700 dealerships.

In reaction, dealers rushed to state legislatures, where friendly lawmakers strengthened franchise protections in 22 states. But the company-owned networks encountered problems beyond franchise laws. Suburban dealerships undercut Ford Auto Collection's fixed prices, hurting sales at some company stores. By 2001, Ford announced that it was getting out of the retail business, and by then, GM had already reversed course under pressure from its dealers.

Nobody knows better than the carmakers how thin today's profit margin is on new-car sales. It's typically a single-digit percentage of a dealership's profits, which are mostly made in service, finance, and used-car sales. Factory stores would require huge investments in land, buildings, and salaries in order to establish choice locations in the best markets. Even Tesla's hard line against independent ownership seems to be softening. Musk has said that he would consider a hybrid dealership model in the future, with the company sharing control.

Then why have dealers so doggedly fought Tesla's intrusion? Some analysts bring up the specter of China, whose car companies have threatened to export vehicles to the U.S. The pres-

New-car sales are typically a single-digit percentage of a dealership's profits, which are mostly made in service, finance, and used-car sales.

ent overcapacity in China's auto plants has analysts wondering where those cars will end up and how the necessary sales networks would be developed. With Tesla's foot in the door, could China's invasion with factory stores represent the ultimate existential threat to the franchised dealer? Perhaps.

But even this scenario has an analogue from the past. Daewoo, once one of South Korea's largest automakers, tried to launch its brand here in 1998 using a direct-sales model. GM acquired Daewoo after it failed, in 2002. Daewoo's demise had many causes, mainly its terrible cars. Which brings us back to Tesla's retail success, which is really based not on its distribution model but on selling what has been widely regarded as a remarkable car.

—JAMES COBB AND NORMAN MAYERSOHN

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FROM AUSTRALIA WITH LOVE,
THE MUSTANG GT350R'S WOVEN WHEEL.

How much does 15 pounds matter? A lot when it comes to wheels. Each of the GT350R's 19-inch carbon-fiber wheels are 15 pounds lighter than an equivalent aluminum wheel. Since a car's wheels are part of what's called "unsprung" weight, the bits not supported by suspension, their presence on the GT350R affects ride and handling enough that Ford engineers devised a unique damper calibration for the model. The reduced rotating mass also improves braking and acceleration, although by too small a degree to accurately measure. These benefits are well-known, but until now, carbon-fiber wheels were not durable enough for a mass-produced car. Ford, however, worked with Australian manufacturer Carbon Revolution to develop a special thermal coating to withstand brake heat, plus a long-lasting black finish that, unfortunately, hides the weave. A bummer for sure, but here's a look inside.

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Trouble at Tesla

THE WRITING'S ON THE WALL FOR THE EV MAKER.

GO LUTZ YOURSELF BY BOB LUTZ

Tesla's showing all the signs of a company in trouble: bleeding cash, securitized assets, and mounting inventory. It's the trifecta of doom for any automaker, and anyone paying attention probably saw this coming a mile away. Like most big puzzles, the company's woes don't have just one source.

It's true that the world may be running light on buyers who will spring for a big-dollar electric vehicle that can't make the hike from Detroit to Chicago without stopping for a long charge. And cheap gasoline isn't helping Tesla's case. Right now, prices around the country are hovering close to \$2 a gallon. If that's

bad news for the Prius and the Volt, it's worse for the Model S.

In addition, there's never been any secret sauce to the company's battery technology. The automakers that bought into Tesla's tech early did so to avoid having to pony up development dollars on first-generation battery packs of their own. Now that Audi has announced it's getting into the EV game, Tesla should be even more concerned. If you're a luxury buyer, which car would you rather have?

And then there's the distribution problem. Nobody has ever been successful with company stores, though plenty of manufacturers have tried them. When

nothing compared with a car dealership's. Smartphones and laptops don't need anything beyond a mall storefront and a staff of kids. A car dealership is very different. It sits on multiple acres. You need a big building with service bays, chargers, and a trained sales force, plus all the necessary finance and accounting people. It ties up a staggering amount of capital, especially when you factor in inventory. Under a traditional franchise arrangement, the factory never has to carry that burden. Right now, Tesla does.

Stockholders may be clinging to the hope that the company's upcoming crossover will help put Tesla back on track, but there's little evidence to bolster that optimism. A big, expensive vehicle with a compromised structure to accommodate gullwing doors can hardly be a sales knockout.

If I were sitting in Musk's seat, I would take an urgent look at cutting cost. Not just taking cost out of the car, but reducing expense in general. When they have a situation where, on an operating basis, they're losing \$4000 per car, they're in trouble. At some point, they're not going to get any more money.

I would seriously consider an entry-level model with a cheaper, range-extended hybrid driveline. Something with a much smaller battery that also looks great and drives great. Something that's electric most of the time, say 50 or 60 miles, but can carry on under gasoline power past that. Would an internal-combustion engine dilute the Tesla brand? Maybe, but everyone said Porsche could never build a front-engine

If I were sitting in Elon Musk's seat, I would take an urgent look at cutting cost.

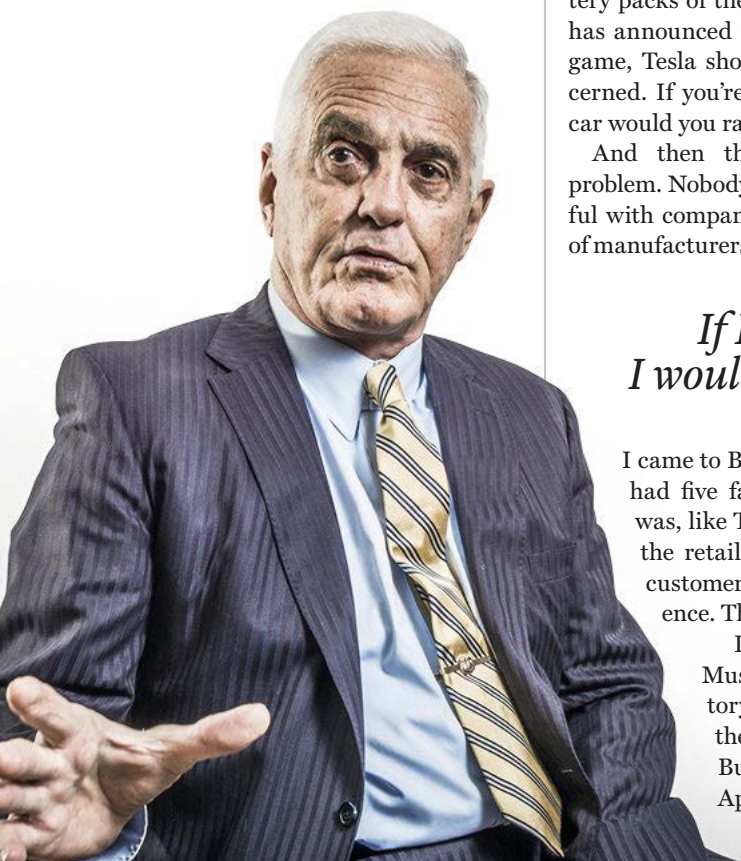
I came to BMW in the Seventies, it had five factory stores. The idea was, like Tesla, to be in control of the retail environment and give customers an upscale experience. They were all money pits.

I think Tesla CEO Elon Musk figured that if factory stores work for Apple, they'll work for Tesla. But the fixed costs for an Apple store are next to

car, and look how that turned out.

I like Elon Musk personally, and I think the Model S is a fabulous car, but history's filled with defunct companies with great products run by brilliant people. Unless Tesla rights its organization and products in a hurry, it'll join those ranks. ■

Bob Lutz has been The Man at several car companies, so your problems are cake. Bring 'em on.

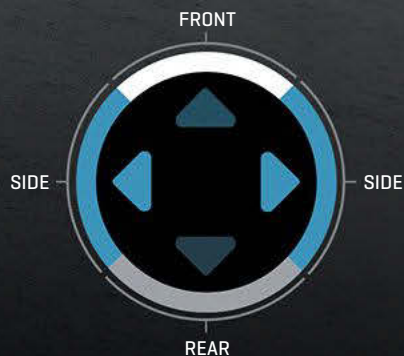


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